

PORT-OF-SPAIN CITY COUNCIL.



ANNUAL REPORT

ON THE

Vital Statistics, Sanitary Condition and Sanitary Administration
of the Urban Sanitary District of the

CITY OF PORT-OF-SPAIN

FOR THE YEAR

1931

BY

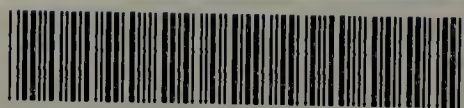
GEORGE H. MASSON, M.D., D.Sc. (P.H.), F.R.C.P.E., F.R.S.E.,
MEDICAL OFFICER OF HEALTH.

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1931

Local Authority in the Urban Sanitary District of the City of Port-of-Spain.
1930-31.

The City Council.

HIS WORSHIP THE MAYOR (ALDERMAN THE HON. A. A. CIPRIANI).

Deputy-Mayor :

COUNCILLOR MURCHISON RIGSBY.

Aldermen :

H. A. DE FREITAS.

A. RICHARDS.

HON. GASTON JOHNSTON, K.C.

F. E. SCOTT, O.B.E., J.P.

Councillors :

DR. T. P. ACHONG.

M. A. MAILLARD.

G. CABRAL.

T. I. POTTER.

J. S. DAYANAND MAHARAJ.

L. A. PUJADAS.

V. D. GORMANDY.

CAPT. A. CLAYTON-SMITH, M.C.

D. M. HAHN, O.B.E.

W. F. STODART.

J. E. LAI-FOOK.

L. G. THOMAS.

J. M. THORNE.

Staff of the Public Health Department.

<i>Medical Officer of Health</i>	....	GEORGE H. MASSON, M.D., C.M., D.SC. (Public Health), F.R.C.P.E., F.R.S.E.
<i>Secretary, Local Authority</i>	....	E. PRADA, M.R.C.S.E., L.R.C.P.L.
<i>Chief Clerk to the Medical Officer of Health</i>	....	W. R. SMITH.
<i>Chief Sanitary Inspector</i>	....	CAPT. E. W. LACK, V.D.
<i>Sanitary Inspectors---1st Grade</i>	....	J. E. FERREIRA, CERT.R.SAN.I. G. CHARLES. HENRY THORNE. J. W. PARRIS. F. A. HOWARD.
	<i>2nd Grade</i>	N. GUPPY. C. C. ASSING. O. E. FORDE, ASSOC.R.SAN.I.
	<i>3rd Grade</i>	W. G. WILLIAMS, Clerk to M.O.H. G. F. ASHE. F. BABB. T. M. MITCHELL, CERT.R.SAN.I., Clerk to J. A. WOOD. M.O.H. H. ST. CYR, CERT.R.SAN.I.
<i>Assistant Sanitary Inspectors</i>	....	J. B. TAYLOR. S. B. NURSE. A. ROMAIN.
<i>Messenger</i>	....	T. CHRISTIAN.

The following are also employed:—

<i>Special anti-mosquito Inspectors</i>	....	HENRY MASON. SAMUEL ABRAHAM and 12 laddermen for eaves gutters' inspection.
<i>Rat Trappers</i>	....	SAMUEL BARKER (Overseer) and 16 men.
<i>Oil Sprayers</i>	....	ALBERT VOISIN (Overseer) and 12 men.
<i>Chemical Sprayers</i>	....	Two men for infectious diseases and vermin.

PORT-OF-SPAIN CITY COUNCIL.

Annual Report of the Medical Officer of Health, 1931.

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URBAN SANITARY DISTRICT OF THE CITY OF PORT-OF-SPAIN.

Report of the Medical Officer of Health for the Year 1931.

SECRETARY, LOCAL AUTHORITY.

SIR,

I have the honour to submit for the information of the Local Authority the following Annual Report on the vital statistics, sanitary condition and sanitary administration of the Urban Sanitary District of the City of Port-of-Spain for the year 1931.

I.—VITAL STATISTICS.

Short Summaries for this and the preceding year.

	1931.	1930.
Area of City (in acres)	1,514	1,514
Population at Census Year, 1931	70,334	—
Mean Population	70,462	68,703
Density of Population—persons per acre	46·5	45·3
Marriages	622	610
Marriage rate—Couples married per 1,000 living at all ages	8·82	8·87
Total Live-births	1,956	1,935
Birth-rate per 1,000 population	27·76	28·16
Birth-rate—Average for previous five years	27·87	27·88
Total Deaths	1,223	1,308
Death-rate per 1,000 population	17·36	19·04
Death-rate—Average for previous five years	21·91	22·73
Natural increase of population	733	627
Natural increase of population—Average for previous five years	399	339
Total deaths under one year	222	233
Infant Mortality Rate	113·50	120·41
Infant Mortality Rate—Average for previous five years	134·19	141·10
Maternal Mortality Rate (Maternal deaths per 1,000 live-births)	7·15	6·71
Total Still-births (Dead-born infants)	139	138
Still-birth Rate (Dead-born infants per cent. of registered live-births)	7·11	7·13
Still-birth Rate—Average for previous five years	7·88	8·14
Notifiable Infectious Diseases—Death-rate per 1,000 population	3·14	3·36
Notifiable Infectious Diseases—Average death-rate for previous five years	3·54	3·64
Cardiac and Vascular Diseases—Death-rate per 1,000 population	2·60	2·82
Pulmonary Tuberculosis	1·90	2·05
Bright's Disease and Nephritis	1·14	1·37
Bronchitis	0·97	0·98
Diarrhoea and Enteritis	0·78	0·84
Pneumonia and Broncho-pneumonia	0·92	0·80
Malaria	0·54	0·58
Cancer and other Maglignant Diseases	0·64	0·48
Syphilis	0·26	0·44
Tuberculosis (Other forms)	0·10	0·23
Enteric Fever	0·16	0·23
Dysentery	0·26	0·16
Influenza	0·06	0·13
Ankylostomiasis	0·03	0·01
Acute Poliomyelitis	0·03	0·01
Diphtheria	0·03	0·01

There was no unusual prevalence of communicable disease during the year and the general health of the City, as reflected in the comparative summary of statistics presented above, was notably good.

The Census figures showed a satisfactory increase over the estimated mean population in 1930 and, also, in 1921, the previous Census year.

There was a fall in the marriages and marriage rate, and a rise in the total births which, however, was not sufficient to prevent a slight fall in the birth-rate. The total deaths and death-rate, as well as the infant mortality rate, declined appreciably, and the still-birth rate slightly. The mortality from notifiable infectious diseases and the death-rate calculated therefrom showed a decline on the preceding year. An increased prevalence of pulmonary tuberculosis was evidenced by a rise in notifications, but this was offset by a decline in the deaths and death-rates assigned not only to pulmonary but, also, other forms of tuberculosis.

Pneumonia diminished in prevalence but the mortality was greater than in the preceding year—suggesting an increased severity in the type of the disease. The number of deaths from dysentery, though moderate, was an increase over last year : more than half the deaths occurred among young infants and children under five years of age.

Diphtheria, acute poliomyelitis and ankylostomiasis claimed two deaths each, compared with one in 1930.

There was a decline in the deaths and death-rates from all other causes, including enteric fever, cardiac and vascular diseases, Bright's disease and nephritis, bronchitis, diarrhoea and enteritis, malaria, syphilis and influenza.

No deaths were ascribed to filariasis.

These statistics are an improvement on the records for last year and, as shown below, compare favourably with corresponding figures for the City of Georgetown, in the neighbouring Colony of British Guiana, where the municipal health administration is in the safe hands of Dr. Wishart, a distinguished fellow student and able colleague of the writer.

PORT-OF-SPAIN AND GEORGETOWN.

Comparative Summaries of Vital Statistics for the year 1931.

						<i>Port-of-Spain.</i>	<i>Georgetown.</i>
Area of City (parks and open spaces included) in acres	....	....	....	....	....	1,514	1,612
Population at Census year 1931	....	....	....	....	....	70,334	61,899
Mean Population	....	....	....	....	....	70,462	61,961
Density of Population—persons per acre	....	....	....	....	....	46	38
Total live-births	....	....	....	....	....	1,956	1,533
Birth-rate	....	....	....	....	....	27·76	24·7
Birth-rate—Average for previous 5 years	....	....	....	....	....	27·87	31·0
Total Deaths	....	....	....	....	....	1,223	1,147
Death-rate	....	....	....	....	....	17·36	18·5
Death-rate—Average for previous 5 years	....	....	....	....	....	21·91	25·4
Natural increase	....	....	....	....	....	733	386
Natural increase—Average for previous 5 years	....	....	....	....	....	399	305
Total deaths under 1 year	....	....	....	....	....	222	199
Infant mortality rate	....	....	....	....	....	113·50	129
Infant mortality rate—Average for previous 5 years	....	....	....	....	....	134·19	155
Total Still-births	....	....	....	....	....	139	115
Still-birth rate	....	....	....	....	....	7·11	7·5
Still-birth rate—Average for previous 5 years	....	....	....	....	....	7·88	8·1
Cardiac and vascular diseases—Death-rate	....	....	....	....	....	2·60	2·06
Pneumonia and Broncho-pneumonia—Death-rate	....	....	....	....	....	0·92	1·29
Tuberculosis Pulmonary—Death-rate	....	....	....	....	....	1·90	1·11
Tuberculosis (Other forms)—Death-rate	....	....	....	....	....	0·10	0·14
Bright's disease and Nephritis—Death-rate	....	....	....	....	....	1·14	1·19
Bronchitis—Death-rate	....	....	....	....	....	0·97	0·91
Diarrhoea and Enteritis—Death-rate	....	....	....	....	....	0·78	0·71
Malaria—Death-rate	....	....	....	....	....	0·54	0·96
Syphilis—Death-rate	....	....	....	....	....	0·26	0·83
Cancer and other malignant diseases—Death-rate	....	....	....	....	....	0·64	0·43
Influenza—Death-rate	....	....	....	....	....	0·06	0·11
Enteric Fever—Death-rate	....	....	....	....	....	0·16	0·08
Ankylostomiasis—Death-rate	....	....	....	....	....	0·03	—
Dysentery—Death-rate	....	....	....	....	....	0·26	0·25
Diphtheria—Death-rate	....	....	....	....	....	0·03	0·03
Acute poliomyelitis—Death-rate	....	....	....	....	....	0·03	—
Filariasis—Death-rate	....	....	....	....	....	—	0·37

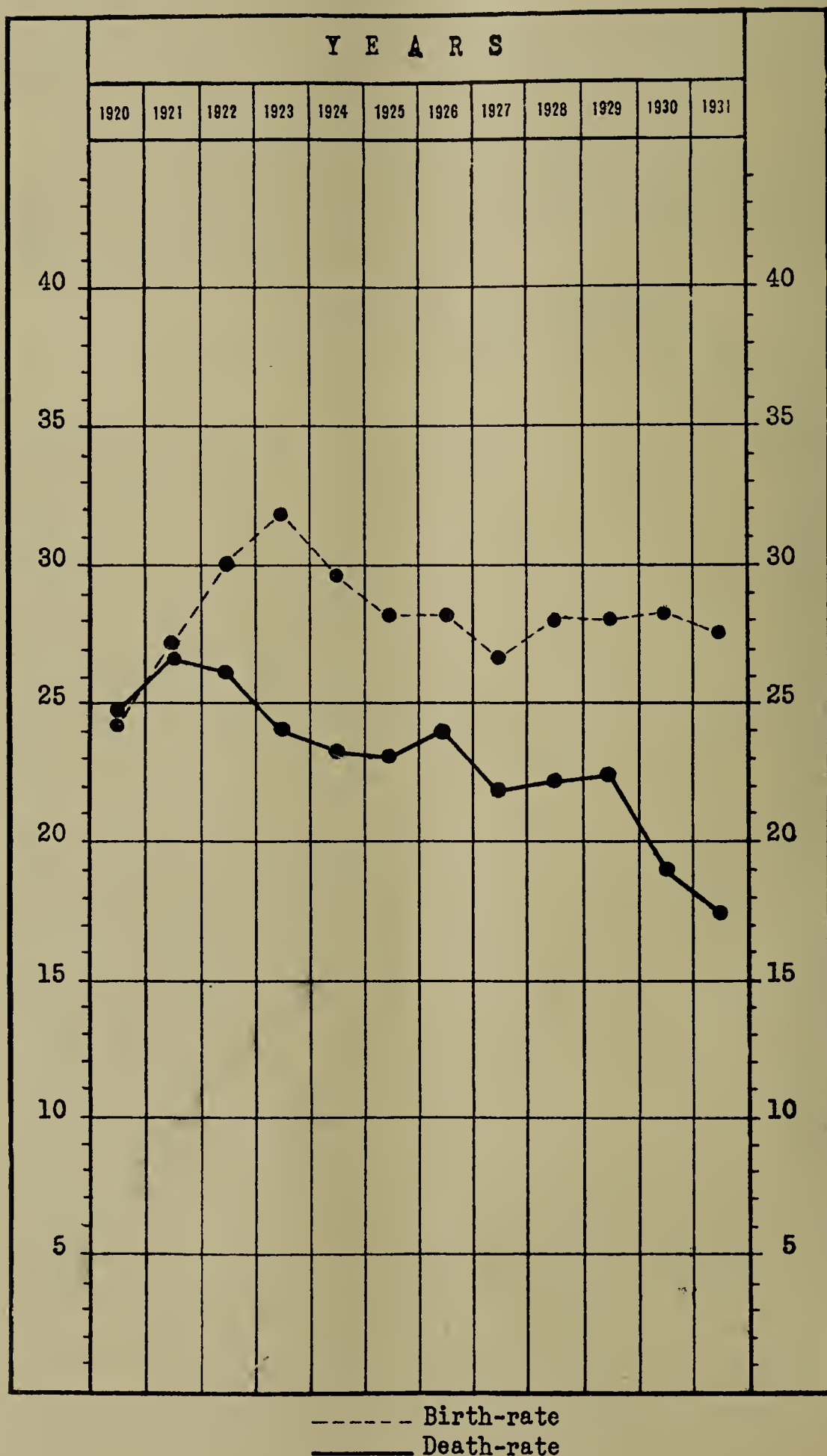
A summary of the principal causes of death in Port-of-Spain for the quinquennial period 1926-30 is given in Table I together with the corresponding statistics for 1931.

Population.—The census enumeration this year revealed the population of the City to be 70,334, and the mean population estimated therefrom to the 30th June, totalled 70,462. This number, which was used throughout for calculating the birth-rates and death-rates, is an increase of 8,626 over the mean population for the previous Census year, 1921.

C H A R T A.

BIRTH-RATE and DEATH-RATE of Port-of-Spain contrasted.

Period 1920—1931.



The mean population estimated from the Census figures, whilst showing an increase of only 1,759 over the estimated population for the previous year, exceeded the average estimated population for the quinquennium 1926-30 by 3,856.

The excess of births over deaths, *i.e.*, the natural increase of the population was 733, a rise of 106 over the record for last year, and 334 over the average figure for the preceding quinquennial period 1926-30.

The distribution of the population in the sub-districts of the City was estimated as stated below:—

<i>Sub-districts.</i>						<i>Population.</i>
City Proper	....	....	....	....	....	28,689
St. Clair	....	....	....	....	....	1,323
East Dry River	....	....	....	....	....	17,048
Belmont	....	....	....	....	....	13,475
Woodbrook	....	....	....	....	....	9,927
Total	....	....	....	....	....	70,462

Marriages and Marriage Rates.—The number of couples married during the year was 622, and the rate per 1,000 of the population at all ages was 8·82, being an increase of 12 on the number of marriages, and a decline of 0·05 on the marriage-rate for the previous year.

Births and Birth-rates.—1,956 live-births were registered during the year, of which 995 were of the male and 961 of the female sex. The male births exceeded those of last year by 31, and female births were fewer by 10, leaving a total excess of 21 births.

The birth-rate per 1,000 population worked out at 27·76, which was lower by 0·40 than in the previous year, and by 0·11 than the annual average for the preceding quinquennium, 1926-30. The number of children of both sexes born was highest in March and lowest in February; in the previous year August was the month of fewest births, but October bore the record for the highest number. More boys were born in December and more girls in March than in any other month:

Table II shows the monthly births and birth-rates calculated therefrom, and Table I compares the corresponding annual figures for the quinquennium 1926-30 with the record for 1931.

Deaths and Death-rates.—Deaths of 647 males and 576 females were registered during the year making a total of 1,223 deaths from all causes, these being 733 fewer than the total live-births and yielding a death-rate of 17·36 per 1,000 population, compared with 1,308 deaths and a death-rate of 19·04 in the previous year.

This year's death-rate was the lowest in the City since 1917, when the Local Authority began its work under the Public Health Ordinance, and of any previous available record.

But in estimating the importance of the decline in deaths and the death-rate this year, compared with the records for previous years, due regard must be had to the fact that the House of Refuge, which contributed an average of 159 to the total deaths during the quinquennium 1925-29, was removed in April, 1930, to a rural registration district, the vital statistics of which are not included in those of Port-of-Spain.

Deaths of males were 9 and of females 76 fewer than in 1930, being a total decline of 85 deaths, with a reduction of 1·68 in the death-rate. There was also a decline of 4·55 on the average death-rate for the quinquennium 1926-30.

The highest number of male and female deaths occurred in July and August, and the lowest in November and January, respectively. For both sexes the most fatal month was July and the least, October.

A full statement of deaths of males and females from month to month, together with the death-rates for both sexes, is given in Table III.

Birth-rates and death-rates for 12 years, 1920-31 are contrasted in Chart A.

Causes of Death.—Deaths from all causes are classified in Table VI and the numbers registered under each group are shown below, as follows :—

<i>Diseases.</i>	<i>No. of Deaths.</i>
Notifiable Infectious Diseases	221
Diseases of the Nervous System and Organs of Special Sense	81
Diseases of the Respiratory System	79
Diseases of the Digestive System	124
Non-Venereal Diseases of the Genito-Urinary System	120
Diseases of the Circulatory System	183
Venereal Diseases of the Genito-Urinary System	30
Diseases of the Puerperal State	13
Diseases of Early Infancy	124
Other General Diseases	161
Old Age	64
Affections produced by External Causes	9
Other Causes of Death	14

Ages at Death.—Deaths from all causes at different age periods, distinguishing between males and females, are given in Table IV. As usual the highest mortality occurred at the extremes of life. 287, or 23·47 per cent., of the total deaths were of persons over 60 years of age, and 222, or 18·15 per cent., infants under one year.

Deaths of females above 60, of which there were 167, preponderated over those of males at the same age period, totalling 120, due, probably, to an excess of the female population at that period of life.

On the other hand, while the excess of male over female births was only 34 male deaths under one year, numbering 144, exceeded the total of 78 deaths for females by 66, nearly doubling the excess of male births. Excluding the extremes of life already referred to, the most fatal age periods were 46-50 and 36-40 for males, and 1-5 and 36-40 for females.

Deaths of infants under one year and at the age period 1-5, which together constituted nearly one-fourth of the total mortality, are discussed elsewhere in the text, and so, also, are maternal deaths in childbirth.

Deaths of non-residents at the Colonial Hospital, numbering 391, appear in Table V. Of these 93 were due to communicable diseases, as follows, viz. :—pulmonary tuberculosis, 63 ; tuberculosis (other forms), 3 ; pneumonia and enteric fever, 12 each ; diphtheria, acute poliomyelitis and acute ascending transverse myelitis, 1 each. Deaths from other causes totalled 298.

The death from transverse myelitis is of special interest and will be referred to later.

Deaths from all causes are classified from month to month in Table VI.

Infant Mortality.—Of the total of 1,223 deaths registered from all causes, 222, or 18·15 per cent., were infants under one year of age. These comprised 144 boys and 78 girls, as against 128 boys and 105 girls, totalling 233 deaths of both sexes at that age in the preceding year—an equivalent of 17·81 per cent. of the total deaths.

With a total of 1,956 births, the **infant mortality rate**, by which is meant the number of deaths under one year per 1,000 live-births registered, worked out at 113·5—a decline of seven deaths per 1,000 births—thereby breaking the record for last year which had previously been the lowest for the City. This new record was a decline of twenty-one on the average rate for the 1926-30 quinquennium.

The infant mortality rate for the Borough of San Fernando, a town of 14,287 inhabitants and next in importance to Port-of-Spain, was 186·25 and, for the whole Colony of Trinidad and Tobago, 144·14.

C H A R T B.

I N F A N T M O R T A L I T Y R A T E

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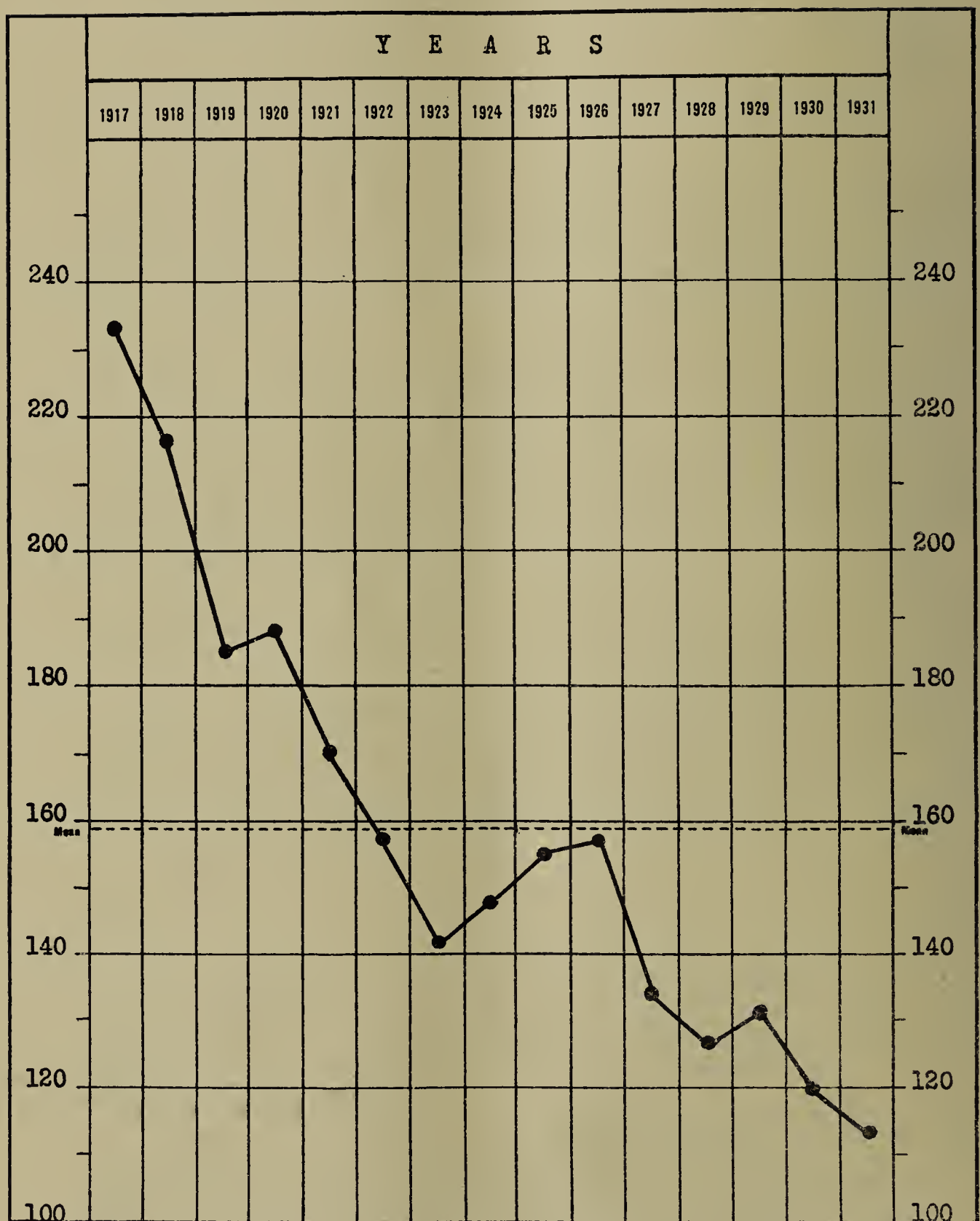


Chart B, based on the statistics tabulated below, shows in graphic form the trend of the infant mortality rate in Port-of-Spain during the past 15 years.

Births and Deaths under one year and Infant Mortality Rates for 15 years, 1917-31.

Year.						Number of Deaths under 1 year.	Total Number of Births.	Infant Mortality Rate.
1917	....	....	....	....	....	412	1,770	232.77
1918	....	....	....	....	....	347	1,625	213.54
1919	....	....	....	....	....	294	1,590	184.91
1920	....	....	....	....	....	323	1,716	188.23
1921	....	....	....	....	....	287	1,687	170.12
1922	....	....	....	....	....	297	1,881	157.89
1923	....	....	....	....	....	285	2,013	141.58
1924	....	....	....	....	....	278	1,890	147.09
1925	....	....	....	....	....	282	1,820	154.95
1926	....	....	....	....	....	287	1,833	156.57
1927	....	....	....	....	....	236	1,753	134.63
1928	....	....	....	....	....	238	1,868	127.41
1929	....	....	....	....	....	250	1,895	131.93
1930	....	....	....	....	....	233	1,935	120.41
1931	....	....	....	....	....	222	1,956	113.50

To facilitate comparison with previous records under this head, the causes of deaths of infants under one year presented in Table VIII are grouped below and the number of deaths in each group expressed as a percentage of the total infant mortality.

Grouping of Causes of Deaths under one year.

Congenital syphilis and various other diseases and conditions commonly ascribed to ante-natal causes, including congenital atrophy, congenital debility, congenital heart disease, meningocele, spina bifida, prematurity, marasmus and malnutrition	....	....	....	49.55 per cent.
Diseases of the Alimentary System	....	....	....	24.77 do.
Diseases of the Respiratory System	....	....	....	16.22 do.
Miliary tuberculosis, acute poliomyelitis, malaria and septic diseases	....	....	....	4.05 do.
Six other registered causes of death, including asphyxia, convulsions, rheumatism, pyrexia, umbilical haemorrhage and exposure	....	....	....	5.40 do.

According to this classification approximately half the number of babies who died in the City during the year came into the world with some constitutional disability which marred their chances of survival at the very beginning of their lives. The grim, twin sisters, poverty and disease, are beyond doubt at the root of this great, social and economic evil; but the part played by immature parenthood, which is much in evidence though actual figures are not available, is by no means negligible. Among female patients attending the writer's Clinic at the Dispensary of the Association for the Prevention and Treatment of Tuberculosis there is always to be found a fair sprinkling of immature, unmarried mothers in their early teens, and the not infrequent history that "the child is dead" lends support to the proposition that immature parents, by enlarging the number of those of either sex who, from disease, privation or other causes, are physically unfit to produce healthy offspring, do help to swell the excessive neo-natal mortality to which attention has already been drawn in previous reports.

The infant mortality included 18 deaths from notifiable infectious diseases, of which 16 were ascribed to pneumonia, and one each to miliary tuberculosis and acute poliomyelitis. Of the non-notifiable infectious diseases malaria claimed three victims, dysentery four and syphilis three. In the preceeding year the figures were 11 for notifiable and 14 for non-notifiable infectious diseases. Nine deaths in the former group were attributed to pneumonia and one each to acute poliomyelitis and tubercular meningitis: in the latter group the records were eight deaths from congenital syphilis, four from malaria and two from dysentery.

The Child Welfare League, through its various organisations, has done an immense amount of good throughout the Colony in educating women in the care of infants, and the benefits which have accrued from the League's campaign are reflected in the decline of the infant mortality rate from an average of 157·30 in the decennium, 1912-21, to 138·59 in the succeeding decennium, 1922-31.

This reflection is particularly noticeable in the figures relating to deaths from diseases caused by bad feeding, bad hygiene and various other consequences of maternal ignorance. But in Port-of-Spain, at any rate, the persistently high proportion of neo-natal mortality, or deaths of infants registered during the first month, notably the first day, of life, pointed to an urgent need for greater concentration on the ante-natal branch of the League's activities, and, with that object in view, the ante-natal work, formerly carried out at the Child Welfare Clinic in the City was, at the beginning of last year, transferred to the Health Office in Charlotte Street and re-organised. The results of this move, it is satisfactory to note, are already becoming visible, if there be any significance in the downward trend of the mortality among infants of two months and under shown in the following comparative statement contrasting the survival period of infants dying under one year in this and the preceding year.

Survival Period of Infants dying under one year of age.

Survival Period.	1931.				1930.			
	Males.	Females	Both Sexes.	Per-centage of total deaths under 1 year.	Males.	Females	Both Sexes.	Per-centage of total deaths under 1 year.
Under 1 day	12	11	23	10·36	12	9	21	9·01
1 day and under 1st week	26	7	33	14·86	25	15	40	17·17
2nd week	3	4	7	3·15	9	10	19	8·15
3rd week	5	2	7	3·15	5	4	9	3·86
4th week	5	4	9	4·05	—	3	3	1·29
Total under 1 month	51	28	79	35·58	51	41	92	39·48
1 to 2 months	17	9	26	11·71	20	20	40	17·17
2 to 3 do.	15	3	18	8·11	14	6	20	8·58
3 to 4 do.	5	6	11	4·95	10	7	17	7·30
4 to 5 do.	10	5	15	6·76	4	8	12	5·15
5 to 6 do.	10	2	12	5·40	7	2	9	3·86
6 to 7 do.	11	5	16	7·21	3	5	8	3·43
7 to 8 do.	14	7	21	9·46	5	3	8	3·43
8 to 9 do.	6	6	12	5·40	5	4	9	3·86
9 to 10 do.	4	5	9	4·05	6	6	12	5·15
10 to 11 do.	1	2	3	1·35	3	3	6	2·57
11 months and under 1 year	—	—	—	—	—	—	—	—
Total	144	78	222	—	128	105	233	—

The writer does not doubt that the increased and improved accommodation recently provided for maternity cases at the Colonial Hospital will have an effect in the reduction of neo-natal mortality, but 21 beds are manifestly not enough in a city of over 70,000 inhabitants, with a maternal mortality rate of 7·15 per 1,000 live-births and an infant mortality rate of 113·50, and, also,

where the usual dwelling of a family of the poorer class is a single barrack room of an insanitary type, totally unsuitable for confinement with decency, let alone comfort. Occasional cases of delivery in the street, due to poverty and the difficulty of making timely preparations, still shock the public sense. In one recent instance the expectant mother, embarrassed by a growing family in her single room, delayed preparations so long that Nature asserted itself on the roadside, while she was actually on her way to beg a friend to send for aid.

In his previous Annual Report the writer ventured to express the hope, which he feels justified in reiterating, that the new maternity ward will at no distant time expand into a separate lying-in hospital and ante-natal centre located among the poor in the populous south-eastern division of the City, and to the erection and maintenance of which the Local Authority and local philanthropy might fittingly contribute.

In the City of Georgetown, British Guiana, maternity and child welfare work have since 1926 formed part of the normal activities of the Municipality, and not without good reason, for, to quote from the 1930 Annual Report of that City's Medical Officer of Health,

"The real value of child welfare work cannot be judged solely by the infant mortality rate. It must be viewed from a wider angle. For it cannot be doubted that to-day infants and young children are deriving from the care bestowed on them by the Council benefits that were unthought of a few years ago. We are thus rearing citizens of a more virile type, who will be better able to resist disease both preventable and unavoidable. Are we not therefore sowing seeds that will in years to come bear the fruit of less sickness and invalidity and consequently of a lower general death-rate?"

These observations apply with equal force to Port-of-Spain and are deserving of serious attention when the long deferred question of municipal aid to child welfare and maternity work comes up for consideration by the Local Authority. But the writer hopes it may not now be out of place to venture the suggestion that a large proportion of the mothers and children of the poorer classes would benefit enormously if a substantial portion of the big saving of recurrent expenditure, which the Local Authority has effected by closing down the Ariapita Asylum, were allocated to the work of the Child Welfare League. It may also be added that it would be the consummation of a far seeing act of poetic justice, which is not likely to be lost on the ratepayers' sense of the fitness of things, if an impressive contribution to maternity welfare work, and the care of infants at the starting post of life, were made from municipal funds saved by the recent assumption on the part of the Government of the responsibility for looking after the aged poor of the City, when their race is run.

Maternal Mortality.—Child bearing is a natural, physiological function of the human female, and any loss of maternal life associated with it is a matter of even greater importance to the City, and, generally, the Colony, than a corresponding neo-natal mortality.

The causes of maternal death in childbirth are many, though, for the most part, capable of being foreseen by ante-natal observation, and prevented by proper care, with professional assistance at the crucial time of parturition. It follows, therefore, that the hazard of maternity is reduced in proportion to the facilities available to every expectant mother for skilled ante-natal care and obstetric help at the time of confinement by a medical practitioner or qualified midwife, either at the mother's home or in a properly equipped institution.

The desirability of local authorities either providing, or aiding the provision of measures for the prevention of undue mortality among women in childbed is made evident in the following observations of Dr. Janet Campbell, Senior Medical Officer for Maternity and Child Welfare to the Ministry of Health, in an official report on maternal mortality:—

It scarcely seems necessary to enlarge upon the serious effect of a high maternal mortality rate upon the health and welfare of many hundreds of families every year. With certain exceptions the women concerned are in the prime of life and are actively engaged in fulfilling the most important duty of bearing and rearing children for the nation. Most of them might in the ordinary course of events look forward to many years of health and usefulness. The unexpected loss of

the mother is a tragedy to the family. It is not infrequently associated with the death of the infant for whom the maternal life has been sacrificed, and is often followed by the impaired health and nutrition of the remaining children. Further, the fact that the mortality returns reveal only a part of the total damage and disability, and that an incalculable amount of unreported and often untreated injury and ill-health result from pregnancy and labour, has many times been pointed out. It is this burden of avoidable suffering which we seek to relieve scarcely less than to save lives which need not be lost.

The number of maternal deaths in childbirth or the puerperal stage registered during the year was 14, of which the youngest mother was 16 and the oldest, 40 years of age. These deaths were equivalent to 9·2 per cent. of the total mortality of women in that child-bearing period. This record was higher than in the previous year, when the maternal deaths numbered 13—the same figure as the yearly average number for the 1926-30 quinquennium—equivalent to 8·4 per cent. of the total female deaths at ages 16-40.

The causes of deaths at different ages for this and the preceding year are tabulated below, as follows:—

Causes of Maternal Deaths according to age for the years 1931 and 1930.

Causes of Death.			1931.							1930.						
			All ages.	16 and under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and upwards.	All ages.	16 and under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and upwards.
Puerperal Sepsis	....	....	6	....	1	2	2	....	1	2	....	1	1	....	....	....
Puerperal Eclampsia	....	....	2	1	....	1	....	....	....	5	1	2	....	1	1	....
Puerperal Haemorrhage	....	....	2	....	....	1	1	....	....	3	....	2	....	....	1	....
Pernicious Vomiting	....	....	1	....	1	....	....	....	....	1	....	....	1	....	....	....
Other causes	....	....	3	....	3	....	....	....	....	2	....	....	1	1	....	....
Total	....	....	14	1	5	4	3	....	1	13	1	5	3	2	2	....

A further tabular statement presented below compares the maternal mortality, birth-rate, death-rate and infant mortality rate for each year of the 1926-1930 quinquennium, and the annual average for the entire period, with the corresponding records for the year under review. Reference to this table shows, among other particulars, that the principal cause of maternal deaths during the year was sepsis, and the proportion per 1,000 live-births, viz.: 3·07, was nearly three times as great as in the preceding year, and 1·46 above the annual average for the 1926-30 quinquennium.

The proportion of maternal deaths from all causes, including sepsis, per 1,000 births was 7·15, being 0·44 greater than in the previous year, and 0·18 in excess of the average annual rate for the 1926-30 quinquennium.

These rates largely exceeded the latest available records for England and Wales and, what is still more significant, showed no sustained tendency to decline during the six successive years of the period 1926-31, although, with a practically undiminished birth-rate, the general death-rate gradually fell from 24·12 per 1,000 in 1926 to 17·36 in 1931—a decline of 6·76 per 1,000—and the infant mortality rate from 156·57 to 113·50 within the same period, equivalent to a decline of 45 deaths under 1 year per 1,000 live-births.

These facts emphasise the need already pointed out for greater effort in ante-natal work and increased facilities for confinements in hospital or, if at home, with skilled professional assistance.

**Particulars of Birth, Death, Infant and Maternal Mortality Rates in Port-of-Spain
for the years 1926-1931.**

Year.	Birth-rate.	Death-rate.	Infant Mortality Rate.	MATERNAL MORTALITY.						
				No. of Deaths.	Deaths per 1,000 Births.					
					Sepsis.	Eclampsia.	Haemorrhage.	Pernicious Vomiting	Other Causes.	Total Child Birth.
1926	28.20	24.12	156.57	14	3.27	3.27	0.55	....	0.55	7.64
1927	26.73	21.85	134.63	8	0.57	1.14	....	....	2.85	4.56
1928	28.14	22.23	127.41	14	1.61	3.21	1.07	1.07	0.54	7.50
1929	28.13	22.31	131.93	16	1.58	3.69	0.53	1.06	1.58	8.44
1930	28.16	19.04	120.41	13	1.03	2.58	1.55	0.52	1.03	6.71
Yearly Average	27.87	21.91	134.10	13	1.61	2.78	0.74	0.53	1.31	6.97
1931	27.76	17.36	113.50	14	3.07	1.02	1.02	0.51	1.53	7.15

Deaths at Ages 1-5.—The number of deaths registered at the age period 1-5 was 75, or 6.13 per cent. of the total deaths at all ages. This mortality was an increase of 8 deaths over the previous year and 19.6 below the average number for the 1926-30 quinquennium. More girls died than boys, the figures being respectively, 40 and 35. The causes of death at these ages are detailed in Table IX and classified in the statement given below, which also shows the number of deaths in each group and the proportion of each such number to the total deaths at the said ages.

Classification of Causes of Death at Ages 1-5.

Diseases.	No. of Deaths.	Percentage of Total.
Diseases of the Alimentary System	23	30.67
Diseases of the Respiratory System	16	21.33
Congenital syphilis, congenital debility and marasmus	11	14.67
Malaria	8	10.67
Tuberculosis (forms other than pulmonary)	3	4.00
Nine other causes, including simple meningitis, convulsions, anaemia, nephritis, diphtheria, acute poliomyelitis, erysipelas, tetanus and shock	14	18.66
	75	100.00

NOTIFIABLE INFECTIOUS DISEASES

Notifications.—The diseases notifiable under the Public Health Ordinance are the five quarantinable diseases, plague, cholera, yellow fever, small pox (including alastrim) and typhus fever, together with the following other diseases, viz.:—diphtheria, membranous croup, enteric fever, pulmonary tuberculosis, tuberculosis (other forms), pneumonia, ophthalmia neonatorum, chicken pox, encephalitis lethargica, cerebro-spinal fever, acute ascending transverse myelitis and acute poliomyelitis.

The number of cases of infectious diseases notified during the year was 353, a decrease of ten notifications on the previous year, and 41 on the average for the 1926-30 quinquennium.

The number of notifications received in the first quarter of the year was 97, in the second 103, in the third 85 and in the fourth 68. For each of these periods the rainfall was, respectively, 2.21, 8.31, 23.75 and 18.29 inches.

No case of quarantinable disease was notified during the year, and of the other notifiable diseases the notifications received were as follows:—pulmonary tuberculosis, 137; pneumonia, 71; enteric fever, 47; diphtheria, 31; chicken pox, 30; tuberculosis (other forms), 10; acute poliomyelitis, 5. There was no notification of the last mentioned disease in the previous year.

Diphtheria showed an increase on the previous year of 2 notifications; pulmonary tuberculosis, 13; chicken pox, 1. As against these increases there was a decline of 12 notifications of pneumonia; 8 of enteric fever; 7 of ophthalmia neonatorum and four of tuberculosis (other forms) during the same period.

Table X shows the diseases and the number of them notified in each month of the year.

The tabular statement presented hereunder compares the notifications within the decennium 1921-30 with those for the present year.

Comparison of Notifications within Decennium 1921-30 and in 1931

Notifiable Diseases.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	Average number within decennium 1921-1930.	1931
Pulmonary tuberculosis	179	190	211	181	173	172	160	152	142	124	168.4	137
Tuberculosis (other forms) ....	....	....	....	6	15	18	10	16	17	14	13.7	10
Small Pox (Alastrim) ....	....	....	....	....	....	16	....	....	....	....	1.6	....
Pneumonia	195	240	76	72	85	86	65	60	70	83	103.2	71
Enteric Fever	287	226	265	370	168	125	95	54	35	55	168.0	47
Diphtheria	18	8	10	27	25	4	16	19	24	29	18.0	31
Chicken Pox	7	27	16	12	31	16	17	23	73	29	25.1	30
Ophthalmia Neonatorum ....	....	....	....	....	5	28	27	31	35	29	25.8	22
Encephalitis Lethargica ....	....	....	....	....	....	....	....	....	1	....	0.5	....
Acute poliomyelitis ....	....	....	....	....	....	....	....	....	....	....	....	5
Total	686	691	578	668	502	465	390	355	397	363	509.5	353

Deaths from Notifiable Infectious Diseases.—There were 221 deaths from notifiable infectious diseases, a decline of 10 on the previous year, and 14.6 on the average for the 1926-30 quinquennial period. The death-rate per 1,000 population from these diseases declined from 3.36 in the previous year to 3.14 in this, and was, also, 0.40 below the average for the 1926-30 quinquennium. Pneumonia showed an increase of 10 deaths; diphtheria and acute poliomyelitis increased by one death each. On the other hand there was a decrease of 7 deaths from pulmonary tuberculosis, 9 from the non-pulmonary forms of this disease and 5 from enteric fever. Table XI shows the number of deaths certified to these diseases from month to month.

The distribution of cases and deaths from notifiable infectious diseases in the sub-districts of the City is shown in Table XII, together with the proportion of the respective cases and deaths per cent. of the total population and of the population of each sub-district.

In the City proper 159 cases of infectious disease were notified with 93 deaths; in St. Clair, two cases with no mortality; in East Dry River, 84 cases with 69 deaths; in Belmont, 56 cases with 36 deaths and in Woodbrook, 52 cases with 23 deaths.

Deaths in Hospital from Notifiable Infectious Diseases.—Table XIII shows that of the 221 deaths registered from notifiable infectious diseases 148, or 66·67 per cent., took place at the Colonial Hospital. This was an increase of over two per cent. on the number of cases of infectious diseases isolated in hospital before death.

Table XIV compares deaths in hospital with deaths at home from notifiable infectious diseases, and shows that the percentage of cases isolated in hospital before death was 70·90 for pulmonary tuberculosis and 90·9 for enteric fever, being increases of 7·78 and 3·40, on the respective figures for the previous year. The corresponding percentages for pneumonia declined by 10 and diphtheria by 50, though in the latter case the mortality was confined to two deaths, one in hospital and the other at home; whereas in the previous year the single death from the disease took place in hospital. Treatment in hospital instead of at home of such acute infectious diseases as diphtheria and enteric fever has the important advantage of the focus of infection being removed to a safe place and enables measures of disinfection to be taken before the recovery or death of the patient. At the same time it is possible in these cases to immunise the contacts from infection by protective inoculation, but no such protection is available in cases of pulmonary tuberculosis and, therefore, the isolation in hospital during the terminal and highly infectious stages of this disease, of over 70 per cent. of those who succumbed during the year, was a measure of great value in the local control of tuberculosis.

NON-NOTIFIABLE INFECTIOUS DISEASES.

Table XV gives a record of the deaths from non-notifiable infectious diseases as they occurred from month to month.

Five diseases were classed in this group and the deaths allocated to them were as follows, viz.: malaria, 38; dysentery, 18; syphilis, 18, of which 8, or 44·4 per cent., were congenital cases; influenza, 4 and ankylostomiasis 2, making a total of 80 deaths, as against 91 in the preceding year—a decline of 11 deaths in the mortality registered under this head.

Of the 80 deaths certified to non-notifiable infectious diseases 39, or 48·75 per cent., died in hospital, compared with 39·56 per cent.—an increase in cases isolated before death of nearly 10 per cent. for the present year. 21 of these deaths in hospital were assigned to malaria; 11 to syphilis; 5 to dysentery and 2 to ankylostomiasis.

Table XVII shows that 55·26 per cent. of the deaths attributed to malaria in the City took place in hospital, as against a percentage of 30 in the previous year. A slightly lower proportion of the total deaths from syphilis, namely, 61·11 per cent., occurred in hospital than in the preceding year, when the corresponding percentage was 66·67. In the case of dysentery the proportion of 27·27 per cent. remained unchanged for both years. Of four deaths ascribed to influenza none took place in hospital.

Table XVIII is a monthly record of deaths from diarrhoea and enteritis of which the total number registered was 55—a decline of three on the previous year.

PRINCIPAL INFECTIOUS DISEASES.

Pulmonary Tuberculosis.—137 notifications of this disease, equivalent to 38·81 per cent. of all cases notified, were received by the Medical Officer of Health, as against 124 notifications, or 34·16 per cent. of the total number received in the previous year.

The notifications received this year, though pointing to a greater prevalence of pulmonary tuberculosis than in the preceding year, were fewer by 13 than the average number, namely 150, for the 1926-30 quinquennium.

The age distribution of the cases notified is tabulated below, and shows a complete absence of any prevalence of the disease among male children up to the age of ten years, and little girls up to five years and under. After age 15 there was a sharp rise in the disease among both sexes which, in the case of males, reached its peak at the 16-20 age period and remained there during the succeeding 21-25 period. Among females the rise was more pronounced, and at the age period 26-30 reached a higher peak than was touched by the males. Two secondary peaks are, also, in evidence, one for males in the period of 36-40 years and the other for females between the ages of 31 and 35, which latter neither progressed nor receded in the subsequent age period of 36-40.

PULMONARY TUBERCULOSIS IN PORT-OF-SPAIN, 1931.

Age distribution of Notifications.

Age periods.					Males.	Females.	Total both Sexes.
Under 1 year	....	....	....	....	....	....	....
1 to 5 years	....	....	....	....	....	....	....
6 to 10 years	....	....	....	....	....	1	1
11 to 15 years	....	....	....	....	3	5	8
16 to 20 years	....	....	....	....	12	12	24
21 to 25 years	....	....	....	....	12	12	24
26 to 30 years	....	....	....	....	5	15	20
31 to 35 years	....	....	....	....	5	7	12
36 to 40 years	....	....	....	....	9	7	16
41 to 45 years	....	....	....	....	4	5	9
46 to 50 years	....	....	....	....	6	2	8
51 to 55 years	....	....	....	....	4	2	6
56 to 60 years	....	....	....	....	2	3	5
Over 60 years	....	....	....	....	3	1	4
Total	....	....	....	....	65	72	137

Deaths from the disease numbered 134, and the death-rate of 1.90 per 1,000 population calculated therefrom was the lowest on record. 13 years ago, in 1918, the death-rate from pulmonary tuberculosis in the City was 3.63 per 1,000 persons living.

Of the total deaths from the disease 71 were males and 63 females. The statement of the age periods of deaths from pulmonary tuberculosis tabulated below shows that among males the most fatal periods of the disease were between 36 and 40 and 21 and 25. For females the corresponding age periods were 16-20 and 21-25 in both of which there was an equal number of deaths from the disease.

Among children under 11 years of age no deaths at all were registered from pulmonary tuberculosis.

PULMONARY TUBERCULOSIS IN PORT-OF-SPAIN, 1931.

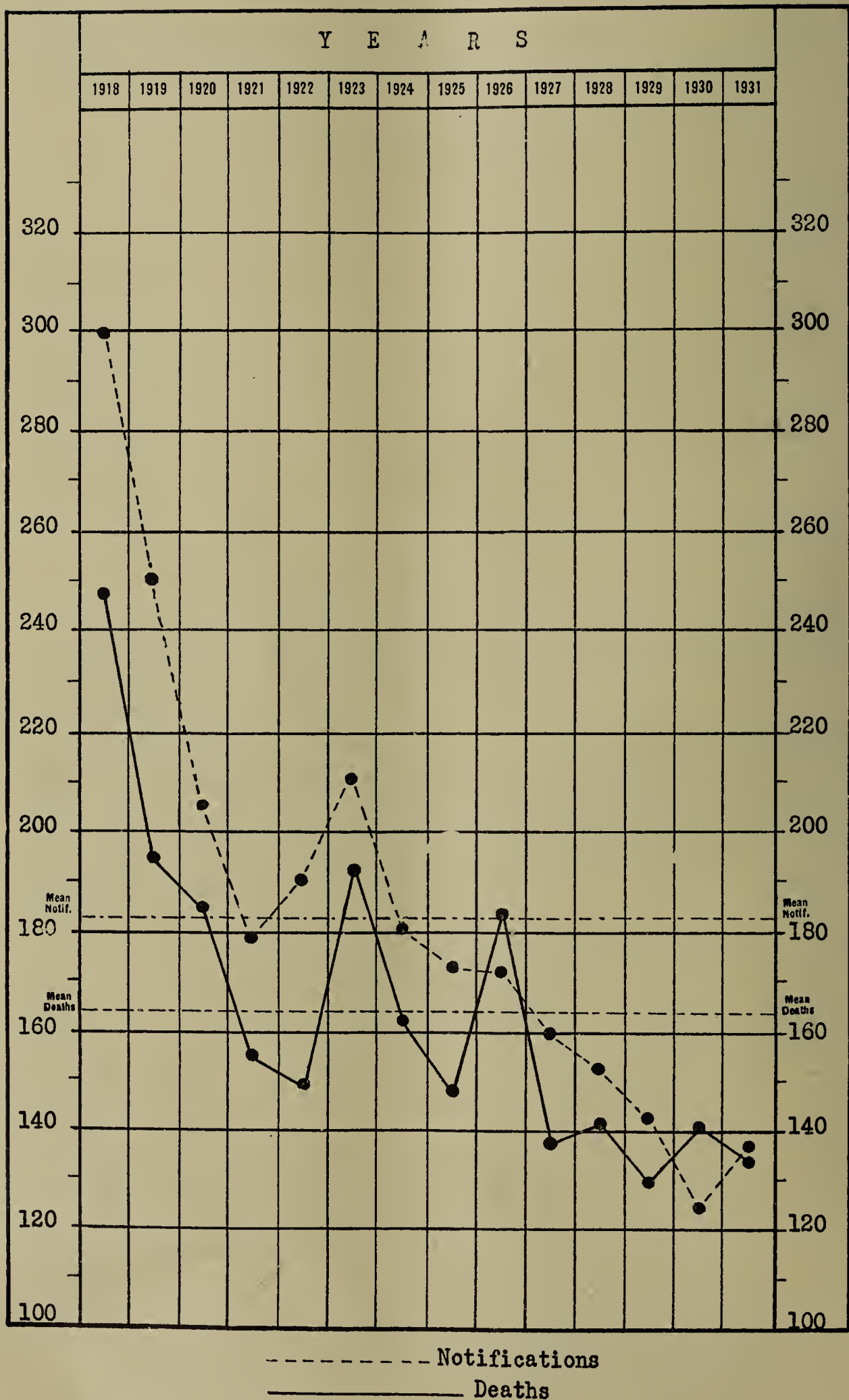
Age distribution of Deaths.

Age periods.					Males.	Females.	Total both Sexes.
Under 1 year	....	....	....	....	....	....	....
1 to 5 years	....	....	....	....	....	....	....
6 to 10 years	....	....	....	....	....	....	....
11 to 15 years	....	....	....	....	2	3	5
16 to 20 years	....	....	....	....	8	12	20
21 to 25 years	....	....	....	....	11	12	23
26 to 30 years	....	....	....	....	7	10	17
31 to 35 years	....	....	....	....	6	6	12
36 to 40 years	....	....	....	....	12	6	18
41 to 45 years	....	....	....	....	7	2	9
46 to 50 years	....	....	....	....	9	5	14
51 to 55 years	....	....	....	....	4	3	7
56 to 60 years	....	....	....	....	2	3	5
Over 60 years	....	....	....	....	3	1	4
Total	....	....	....	....	71	63	134

C H A R T C.

PULMONARY TUBERCULOSIS IN PORT-OF-SPAIN.

Notifications and Deaths, 1918--1931.



The decline of notifications, deaths and death-rates from pulmonary tuberculosis for the period of 14 years, 1918-31, is shown in the table below. The curves of the notifications and deaths are represented in Chart C.

PULMONARY TUBERCULOSIS IN PORT-OF-SPAIN.
Notifications, Deaths and Death-rates, 1918-31.

Year.			Notifications.	Total Deaths.	Death-rate per 1,000 population.
1918	....	....	299	247	3.63
1919	....	....	250	194	2.82
1920	....	....	205	185	2.65
1921	....	....	179	155	2.51
1922	....	....	190	149	2.38
1923	....	....	211	192	3.04
1924	....	....	181	162	2.53
1925	....	....	173	148	2.29
1926	....	....	172	183	2.81
1927	....	....	160	138	2.10
1928	....	....	152	141	2.13
1929	....	....	142	129	1.92
1930	....	....	124	141	2.05
1931	....	....	137	134	1.90

The proportion of deaths from pulmonary tuberculosis to deaths from All Causes in Port-of-Spain, by age and sex, is shown in the Table below.

For both males and females the proportions are highest at ages 16-25, the figures for females being relatively higher than those for the opposite sex. At ages 11-15, deaths from pulmonary tuberculosis and from All Causes are numerically low, but the relative proportions were high for pulmonary tuberculosis, being one-third of deaths from All Causes for females, and 28.5 per cent. for males.

There was a secondary peak for males at ages 36-45, characterized by a rise of 0.6 above the percentage of deaths from pulmonary tuberculosis at the 26-35 age period. Among females no such rise was revealed, but the proportions dropped steadily at the rate of 17.3 per cent. between ages 16-25 and 26-35 ; 14 per cent. between ages 26-35 and 36-45 ; 1 per cent. between ages 36-45 and 46-55 ; 5.6 per cent. between ages 46-55 and 56-65, compared with the following percentages of decline in the case of males, viz. : 7.1 between 16-25 and 26-35 ; 6.1 between 36-45 and 46-55, and 9.3 between 46-55 and 56-65.

Under 11 and over 65 years no deaths were attributed to pulmonary tuberculosis during the year.

Proportion of Deaths from Pulmonary Tuberculosis to Deaths from All Causes in Port-of-Spain, according to Age and Sex in 1931.

Age Periods.			Males—Deaths.			Females—Deaths.		
			All Causes.	Pulmonary Tuberculosis.	Percentage due to Pulmonary Tuberculosis.	All Causes.	Pulmonary Tuberculosis.	Percentage due to Pulmonary Tuberculosis.
Under 1 year	....	....	144	....	....	78	....	....
1 to 5 years	....	....	35	....	....	40	....	....
6 to 10 years	....	....	12	....	....	7	....	....
11 to 15 years	....	....	7	2	28.5	9	3	33.3
16 to 25 years	....	....	50	19	38.0	54	24	44.4
26 to 35 years	....	....	62	13	20.9	59	16	27.1
36 to 45 years	....	....	88	19	21.5	61	8	13.1
46 to 55 years	....	....	84	13	15.4	66	8	12.1
56 to 65 years	....	....	81	5	6.1	61	4	6.5
Over 65 years	....	....	84	....	....	141	....	....
Total	....	....	647	71	10.9	576	63	10.9

PULMONARY TUBERCULOSIS IN THE COLONY.

Owing to the number of persons, including vagrants, suffering from pulmonary tuberculosis who, attracted by the hope of better facilities for medical treatment, come from country districts to the City and eventually die there, without disclosing their permanent place of abode, difficulties arise in the way of compiling a strictly correct report of the mortality among actual residents, and, therefore, the progress of the disease, as reflected by the death-rate, is best studied by considering the relevant mortality statistics for the Colony as a whole.

These statements show an upward trend of deaths allocated to the disease prior to the launching of the anti-tuberculosis campaign of the Association for the Prevention and Treatment of Tuberculosis in 1905. Concurrently with the activities of the Association there has been a marked reversal of the trend of the disease which, with slight, occasional remissions, has steadily pursued a downward course, the number of deaths falling from 754 in 1905-06 to 385 in 1931, and the corresponding death-rates from 23.5 to 9.3 per 10,000 population.

Below is a tabulated statement of deaths and death-rates from pulmonary tuberculosis in the Colony of Trinidad and Tobago for the period of 30 years, 1902-31, showing the marked decline of the disease from the peak year 1905-1906.

The death-rates are graphically represented in Chart D.

Deaths and death-rates from Pulmonary Tuberculosis in the Colony from 1902-3 to 1931.

Year.	No. of Deaths.	Death-rate per 10,000 population.	Year.	No. of Deaths.	Death-rate per 10,000 population.
1902- 3	591	20.2	1917	475	12.6
1903- 4	675	22.4	1918	519	13.6
1904- 5	666	21.5	1919	474	12.3
1905- 6	754	23.5	1920	499	12.8
1906- 7	668	20.2	1921	473	12.8
1907- 8	721	21.4	1922	420	11.2
1908- 9	672	19.5	1923	470	12.4
1909-10	620	17.6	1924	480	12.6
1910-11	710	19.5	1925	440	11.4
1911-12	621	18.4	1926	500	12.9
1912-13	567	16.5	1927	474	12.1
1913-14	518	14.8	1928	425	10.7
1914-15	513	14.4	1929	420	10.4
1915 (9 months)	371	13.6	1930	395	9.6
1916	528	14.3	1931	385	9.3

Dr. Wise, Surgeon-General, in his Administrative Report for the year 1930, referring to the steady reduction in the mortality from pulmonary tuberculosis in the Colony, wrote as follows :—

“ While there are very many and diverse social factors which affect the occurrence and reduction of Tuberculosis, the above record is one which must be gratifying to all those who work for the improvement of public health in Trinidad. Foremost amongst them are those persons who sponsored and have continually supported the Trinidad Association for the Prevention and Treatment of Tuberculosis which has been steadily at work since 1905. This Society has maintained a dispensary and domiciliary service continuously associated with it and steady and valuable instruction in the general principles of infection and prevention which clearly must have had a far reaching effect. The Medical Officer of this Association has fortunately also for much of the period been the Medical Officer of Health to the City, thus co-ordinating in many ways, especially as regards spacing of buildings and ventilation of houses, the teaching of the Association and the practice in the City.”

Dr. Wise's remarks with regard to the far reaching effect of an active anti-tuberculosis campaign are borne out by the following statement of Sir Robert Philip, the writer's honoured *Maitre*, and Father of the almost universally adopted Edinburgh Scheme for the eradication of tuberculosis, in the 1930-31 Annual Report of the Royal Victoria Hospital Tuberculosis Trust, viz. :—

“ A comparison of the mortality from tuberculosis in different countries shows that the decline in mortality is very unequal throughout the world. Broadly stated, we may say that in those countries and cities where the campaign against tuberculosis is being waged on efficient lines, the decline in mortality is correspondingly evident. In those countries and cities where the mortality remains high, the campaign against tuberculosis has had less effective play.”

P U L M O N A R Y T U B E R C U L O S I S I N C O L O N Y O F T R I N I D A D A N D T O B A G O .

D E A T H - R A T E P E R 1 0 , 0 0 0 L I V I N G , 1 9 0 2 - 0 3 — 1 9 3 1 .



The death-rate from PULMONARY TUBERCULOSIS declined 60.4 per cent between the peak year, 1905—06, and 1931, and from ALL CAUSES 23.1 per cent in the same

period of 27 years.

It is, of course, unquestioned that poverty, underfeeding, overcrowding, insufficient access of sunlight and fresh air in dwelling houses, and excesses of various kinds foster the disease and hasten the period of death when infection is established; but great as these social evils are, they do not of themselves produce tuberculosis, for which the presence of the tubercle bacillus is as essential as is the Prince of Denmark for the production of Hamlet.

And, therefore, it stands to reason that the dissemination of anti-tuberculosis information among the people, as has been done for many years past from the Tuberculosis Dispensary; by the 1913 Intercolonial Tuberculosis Conference, which had its educative effect not only in Trinidad, where it was held under the auspices of the local Association for the Prevention and Treatment of Tuberculosis, but throughout the West Indies and British Guiana; by periodical lectures and exhibitions; by leaflets, posters, and the agency of the Press; by domiciliary instruction from tuberculosis Nurse Visitors regarding the precautions to be taken against infection, coupled with the isolation in hospital, during the highly infective stages, of a large proportion of cases—this year, over 70 per cent. of those which ended fatally—and followed up by the disinfection of infected premises and the systematic examination and care of contacts—all these things must inevitably have an effect in reducing the incidence, or retarding the progress of tubercular infection, and ultimately lowering the death-rate resulting therefrom.

In this connection it is well worthy of special note that among children under the age of 11 years there were no deaths from pulmonary tuberculosis, and only one notification of the disease.

Naturally, better wages, improvements in public and domestic sanitation and 'the many and divers social factors' affecting the incidence of sickness and death, tend to a general lowering of deaths from all causes, including tuberculosis, but, as is pointed out in the report of the Tuberculosis Trust quoted above,

"The striking decline in mortality from tuberculosis has been much more rapid than the decline in mortality from all causes."

This phenomenon is precisely what has been observed in Trinidad and Tobago, where the death-rate from pulmonary tuberculosis declined by 60·4 per cent. during the past 27 years, whereas the decline in the mortality from all causes during the same period has not been more than 23·1 per cent.

Striking as these results are, much more may be achieved if certain proposals mentioned in the Surgeon-General's report as being under the consideration of the Government for the establishment of a Sanatorium were carried into effect. It is presumed that the proposed institution is intended for the treatment of early tubercular disease, and such open cases as may have benefited sufficiently from hospital or private treatment as to render their transfer to a Sanatorium desirable.

Six or seven years ago one of the Vice-Presidents of the Association for the Prevention and Treatment of Tuberculosis made an offer of the sum of £6,000 for the establishment of a Sanatorium for tuberculosis, provided the Government guaranteed the funds for its maintenance; but this generous proposal, which remained open for a considerable time, was ultimately withdrawn, and the money distributed equally between two other public institutions, because the state of the finances of the Colony did not then permit of the required guarantee being given.

As one of the original objects of the Association was the establishment of a Sanatorium for both curative and prophylactic treatment, with consequent benefit to the community as well as the individual, may the writer venture to express the hope that some special effort will be made by the Government to help the Association to recover its lost chance? For, to quote the concluding paragraph of the Report of the Tuberculosis Trust already referred to,

"Everything encourages us to a vigorous prosecution of the campaign. The arresting and accelerating decline in mortality from tuberculosis continues. The drop is greater in tuberculosis than in any other disease. Final success is within our grasp."

Non-Pulmonary Tuberculosis.—Ten cases of non-pulmonary forms of tuberculosis, usually attributed to bovine infection, were notified during the year, with 7 deaths, equivalent to a death-rate of 0·10 per 1,000 population, compared with 16 deaths and a death-rate of 0·23 in the preceding year. The average death-rate from these forms of tuberculosis for the 1926-30 quinquennium was 0·28.

The sexes were equally divided in respect of the number of notifications, but there were 6 male to 1 female death.

Notifications and deaths of males and females at different ages are given below.

Non-Pulmonary Tuberculosis.

Ages.	NOTIFICATIONS.			DEATHS.		
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.
Under 1 year	1	....	1	1	....	1
1- 5	2	1	3	3	....	3
6-10	1	3	4	1	1	2
11-15	....	....	....	....	....	....
16-20	....	....	....	....	....	....
21-25	....	....	....	....	....	....
26-30	....	1	1	....	....	....
31-35	....	....	....	....	....	....
36-40	1	....	1	1	....	1
Over 40	....	....	....	....	....	....
All ages	5	5	10	6	1	7

Particulars, by sex and age, of the forms notified, which included miliary tuberculosis, psoas abscess, spinal caries, tubercular meningitis and tubercular peritonitis, and of deaths, comprising miliary tuberculosis, tabes mesenterica, tubercular meningitis and tubercular arthritis, are set out in the Table hereunder.

Non-Pulmonary Tuberculosis—Forms notified and deaths registered by age and sex.

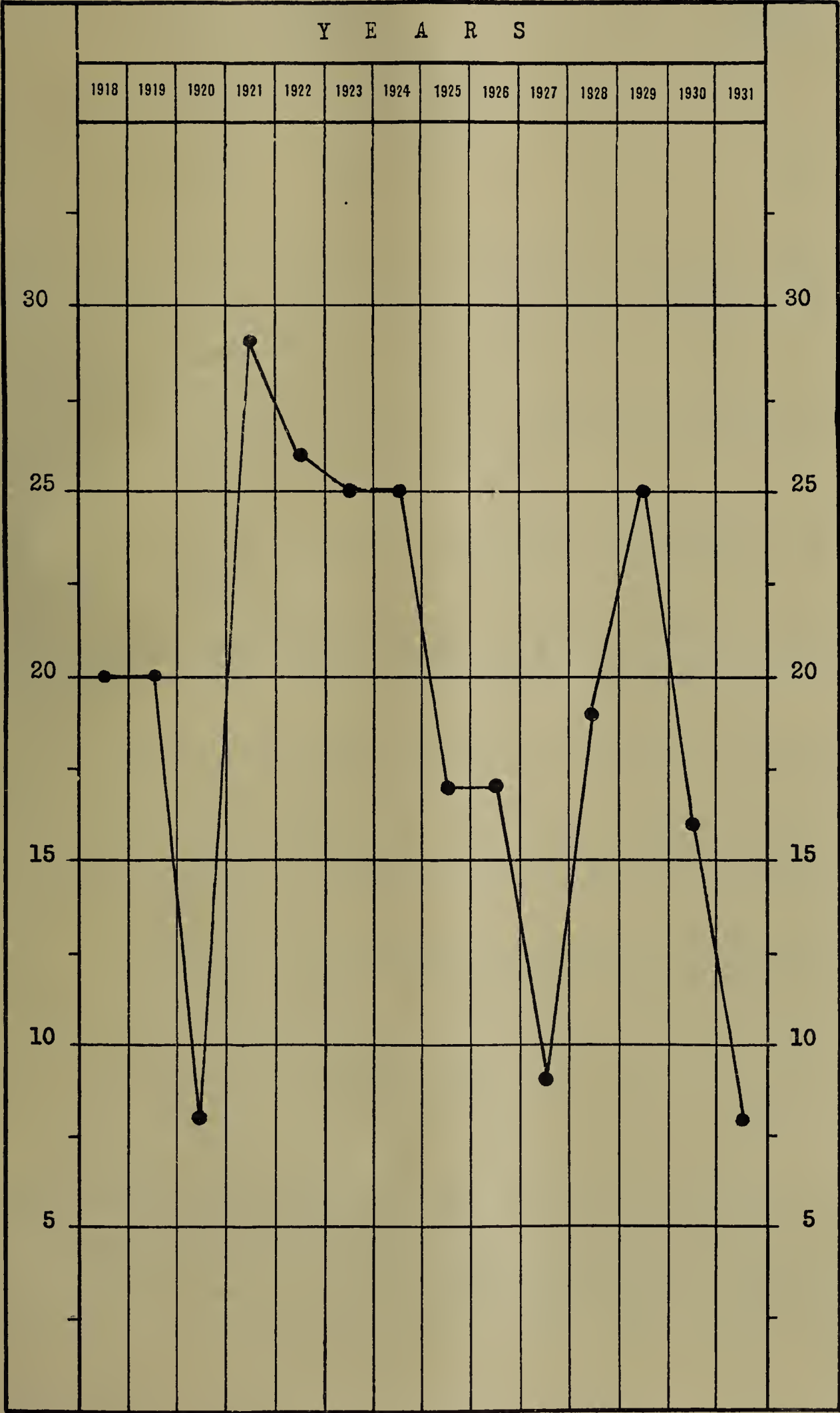
Ages.	NOTIFICATIONS.				DEATHS.			
	Forms of the Disease.	Males.	Females.	Both Sexes.	Forms of the Disease.	Males.	Females.	Both Sexes.
Under 1 yr.	Miliary Tuberculosis	1	....	1	Miliary Tuberculosis	1	....	1
1- 5	Psoas Abscess	1	....	1	Tabes Mesenterica....	1	....	1
1- 5	Spinal Caries	....	1	1	Tubercular Meningitis	2	....	2
1- 5	Tubercular Meningitis	1	....	1	....	....	....	....
6-10	Psoas Abscess	1	1	2	Tubercular Arthritis	....	1	1
6-10	Tubercular Meningitis	....	2	2	Tubercular Meningitis	1	....	1
11-15	....	....	....	....	....	....	....	....
16-20	....	....	....	....	....	....	....	....
21-25	....	....	....	....	....	....	....	....
26-30	Tubercular Peritonitis	....	1	1	....	....	....	....
31-35	....	....	....	....	....	....	....	....
36-40	Miliary Tuberculosis	1	....	1	Miliary Tuberculosis	1	....	1
Over 40	....	....	....	....	....	....	....	....
	Total	5	5	10		6	1	7

The annual number of deaths from non-pulmonary forms of tuberculosis for the 14 years, 1918-31, with the percentage of deaths from pulmonary tuberculosis at different ages, is given in the statement presented below. The curve of deaths from non-pulmonary forms of the disease is shown in Chart E.

C H A R T E.

Curves of Deaths from TUBERCULOSIS (Other forms).

Port-of-Spain 1918--1931.



Proportion of deaths from Non-Pulmonary forms of Tuberculosis to total deaths from Pulmonary Tuberculosis for the years 1918-1931.

Year.	Deaths from Non-Pulmonary Tuberculosis.		Year.	Deaths from Non-Pulmonary Tuberculosis.	
	Number.	Percentage of Deaths from Pulmonary Tuberculosis.		Number.	Percentage of Deaths from Pulmonary Tuberculosis.
1918	20	8.0	1925	17	11.4
1919	20	10.3	1926	17	9.2
1920	8	4.3	1927	9	6.5
1921	29	12.2	1928	19	13.4
1922	26	17.4	1929	25	19.3
1923	25	13.0	1930	16	11.3
1924	25	15.4	1931	7	5.2

The Tuberculosis in Cattle Regulations, 1928, published in the writer's Annual Report for that year, and the more recent 1931 Amendment of the Sale of Milk Bye-laws, to which reference will be made later, have strengthened the measures previously in force for combating the spread of non-pulmonary forms of tuberculosis by means of the milk of infective milch cows.

The decline in the number of deaths during the year from these bovine forms of the disease and, also, in their proportion to the total deaths from pulmonary tuberculosis may not be without some relation to the improved methods of control, and the ultimate results will be watched with interest.

Enteric Fever.—This disease continued to decline both in prevalence and mortality. 47 cases were notified, as against 55 in the previous year, a decrease of 8 notifications. The annual average number of notifications for the quinquennium 1926-30 was 72.8.

Deaths registered to the disease numbered 11, yielding a death-rate of 0.16 per 1,000 population, compared with 16 deaths and a death-rate of 0.23 per 1,000 in the preceding year, and an annual average death-rate of 0.26 for the 1926-30 quinquennium.

For the period of six years, 1918-23, immediately preceding the introduction of the Paterson liquid chlorine plant for purifying the water supply, the average yearly notifications of enteric fever numbered 334, and the deaths, 73.83, with an annual average death-rate of 1.11.

Three hundred and one contacts to the disease, unable to afford this protection privately, were inoculated free of charge by the Medical Officer of Health with combined typhoid and paratyphoid vaccines. In most cases each contact received two successive injections.

With a partial sewerage system, entailing the existence of 5,356 cesspits in the City, the low incidence of enteric fever during the year is by no means unsatisfactory; but there is still room for improvement, especially when the sewerage of the City becomes general.

In the meantime the spread of the disease by flies bred in cesspits is controlled to a large extent by regularly oiling these dangerous and out of date conveniences. This preventive measure has also proved satisfactory in Georgetown, British Guiana, where it has for many years been carried out with oil imported from Trinidad.

Owing to the extension right up to the City boundaries of inhabited portions of neighbouring outdistricts, where the standard of sanitation is below that of the City, and, also, the rapidly increasing facilities for quick passenger traffic between the City and distant villages by bus and other motor conveyances, the control of enteric fever in the City would become correspondingly difficult but for constant improvements in the general sanitation of rural districts, particularly the protection of wells and other sources of village water supply from contamination.

The thoroughness with which protective inoculation is carried out by the Central Board of Health in every outlying district where an outbreak of enteric fever occurs is another co-operative measure which has been of great assistance to the Local Authority in controlling the spread of enteric fever in the City.

Notifications of enteric fever with deaths and death-rates for 14 years, 1918-31 are tabulated below, and the curves of notifications and deaths for the same period are displayed in Chart F.

ENTERIC FEVER.

Notifications, Deaths and Death-rates for the years 1918-1931.

Year.	Notifi- cations.	Deaths.	Death-rates per 1,000 population.	Year.	Notifi- cations.	Deaths.	Death-rates per 1,000 population.
1918	495	104	1.52	1925	168	20	0.31
1919	330	76	1.10	1926	125	26	0.39
1920	401	90	1.29	1927	95	17	0.26
1921	287	77	1.25	1928	54	14	0.21
1922	226	53	0.84	1929	35	13	0.19
1923	265	43	0.68	1930	35	16	0.23
1924	370	49	0.76	1931	47	11	0.16

Pneumonia.—Under this head are included lobar and broncho-pneumonia. Both are compulsorily notifiable under the Public Health Ordinance.

Lobar pneumonia is a primary, specific disease and the infective germ is the *Diplococcus pneumoniae* or *Pneumococcus*. Broncho-pneumonia, on the other hand, is not usually a primary disease, but a secondary condition described as varying in course and bacteriology and characterised by scattered patches of inflammation in the lungs.

Epidemiologically, broncho-pneumonia is a common sequela of influenza, and a reliable indicator of the degree of virulence of any outbreak of this disease; but the precise relation of influenza deaths to pneumonia in Port-of-Spain is yet to be studied. The high case mortality suggests a closer correspondence between the two diseases than is usually taken into account.

During the year there was a decrease in the mortality due to pneumonia, the cases notified having totalled 71, as against 83 in the previous year—a decline of 12 cases. Of the 71 notifications 48 were allocated to lobar and 23 to broncho-pneumonia. The corresponding figures in the preceding year were 58 and 25. Deaths from the disease numbered 65, yielding a death-rate of 0.82 per 1,000 living, compared with 0.80 in the previous year and an annual average of 0.80 for the preceding five years.

These figures show an increase of 10 on the previous year in the total deaths from the disease, due entirely to a rise in the mortality attributed to broncho-pneumonia, the number of deaths from lobar pneumonia for each of the two years having remained unaltered.

Of the total deaths 29, or 44.61 per cent., died at home and 36, or 55.39 per cent., died in hospital. (Table XIV.)

In the preceding year the deaths in this group totalled 55, of which 19, or 34.55 per cent., died at home and 36, or 65.45 per cent., died in hospital.

Notifications of pneumonia, with deaths, death-rates and case mortality for the decade 1922-31 are given below in tabular form:—

PNEUMONIA.

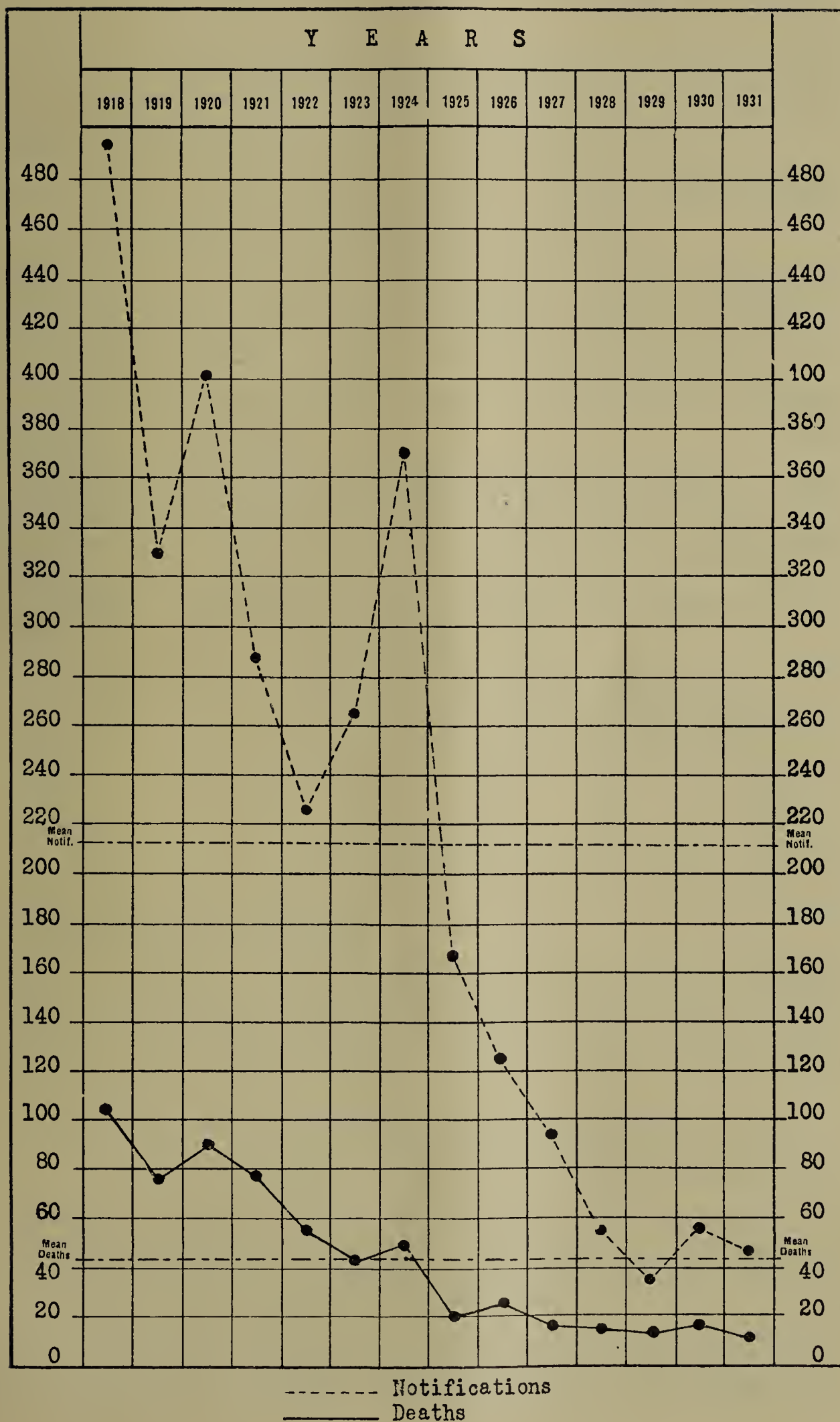
Notifications, Deaths, Death-rates and Case-Mortality for the decade 1922-31.

Year.	Notifi- tions.	Deaths.	Death-rate per 1,000 population.	Case Mortal- ity.	Year.	Notifi- tions.	Deaths.	Death-rate per 1,000 population.	Case Mortal- ity.
1922	240	140	2.24	58.3	1927	65	41	0.63	63.0
1923	76	75	1.19	98.6	1928	60	51	0.77	85.0
1924	72	50	0.78	69.4	1929	70	55	0.82	71.4
1925	85	63	0.98	74.1	1930	83	55	0.80	66.2
1926	86	62	0.95	72.0	1931	71	65	0.92	91.5

C H A R T F.

ENTERIC FEVER IN PORT-OF-SPAIN

Notifications and Deaths, 1918—1931.



The average case mortality for the combined forms of the disease in the quinquennium 1927-31 was 75.4, an increase of 1.2 on the figures for the preceding 1922-26 quinquennium, but the trend of the death-rate from the disease is downward, as shown by the yearly average mortality for the 1927-31 period which was 0.78 per 1,000 population, compared with 1.22 for the preceding five years.

This trend is visible even when the abnormal figures for the year 1922, when there was a severe outbreak of influenza in the City, are eliminated, and the averages for the two periods of 4 years 1923-26 and 1927-30 compared, the respective records being 0.97 and 0.75 per 1,000 population.

The prevention of deaths from broncho-pneumonia is the prevention, among other diseases, of influenza, measles, enteric fever, whooping cough, bronchitis, and even of pulmonary tuberculosis, and, therefore, more difficult of achievement than in the case of lobar pneumonia which is a specific entity.

The spread of lobar pneumonia is favoured by bad hygienic conditions, as dampness, exposure, over exertion, fatigue, sudden changes of temperature, such as are commonly felt in the City after sundown in small houses covered with galvanized iron, without being ceiled or closeboarded. Shock, especially the result of accident or injury, is another important contributory factor.

The usual mode of infection is by close contact in insufficiently ventilated places with actual, and frequently unrecognised, cases of the disease, and carriers, who may also infect themselves.

Considering the healthiness of the climate, this undue prevalence of lobar pneumonia in the City, and the high mortality rate arising therefrom may, in the writer's opinion, be regarded as expressions of the deplorable overcrowding which exists in the barrack yards, and the lowered vitality of the poor who inhabit them.

A statement of notifications of lobar pneumonia, with deaths and case mortality for five years 1927-1931 is tabulated below.

Lobar Pneumonia.

Year.	Notifications.	Deaths.	Death rate per 1,000 population.	Percentage of Case Mortality.
1927	45	23	0.35	51.1
1928	45	33	0.50	73.3
1929	43	34	0.50	79.0
1930	58	39	0.57	67.2
1931	48	39	0.55	81.2
Average	47.8	33.6	0.49	70.3

This Table reveals a persistently upward tendency of deaths, death-rate and case mortality due to the disease.

Assuming laboratory facilities are available, or can be made so, the writer ventures to suggest to medical practitioners concerned that special efforts to lower the case mortality of lobar pneumonia might be made by getting the infecting pneumococcus bacteriologically typed in every case, so that, as far as possible, patients might, with improved prospects of recovery, receive early treatment with the appropriate anti-serum.

A classification of cases according to the responsible groups or types of pneumococcus, with the mortality assigned to each group per cent. of cases, as was originally done at the Rockefeller Institute, would be of great epidemiological value.

Diphtheria.—Thirty-one cases were notified with two deaths and a death-rate of 0.03 per 1,000 population, compared with 29 cases and a death-rate of 0.01 in the preceding year, with a yearly average of 18.4 notifications and an average death-rate of 0.2 for the 1926-30 quinquennium.

As the low mortality indicates, the cases—in practically every instance confirmed bacteriologically—were of an unusually mild type. This also appears to have been the case in Georgetown, where the death-rate from the disease was exactly the same as in Port-of-Spain.

Isolation of the patient, treatment with diphtheria anti-toxin, passive immunisation of contacts and disinfection are the routine measures of control.

Notwithstanding its mild type, the disease, which in former times was comparatively rare, is showing a tendency to become increasingly prevalent not only in the City but, it appears, in rural districts also, a circumstance which might eventually lead to the general practice of active immunisation among school and other young children.

The cases notified and the deaths and death-rates arising therefrom for the 15 years, 1917-31 are tabulated hereunder.

The notifications and deaths for the same period are graphically represented in Chart G.

DIPHTHERIA.

Notifications, Deaths and Death-rates for the years 1917-31.

Year.	Notifica- tions.	Deaths.	Death-rates.	Year.	Notifica- tions.	Deaths.	Death-rates.
1917	9	4	0.06	1925	25	2	0.03
1918	17	0	0.00	1926	4	1	0.02
1919	9	1	0.01	1927	16	2	0.03
1920	6	1	0.01	1928	19	3	0.05
1921	18	1	0.02	1929	24	0	0.00
1922	8	2	0.03	1930	29	1	0.01
1923	10	3	0.05	1931	31	2	0.03
1924	27	2	0.03				

Small Pox.—There was no outbreak of small pox during the year, nor since 1926 when, as the result of a stranger arriving in the City from the Spanish Main whilst incubating alastrim, 16 cases of this disease, without mortality, took place between the months of January and June of that year.

Chicken Pox.—Thirty cases of chicken pox were notified, as against 29 in the previous year, and an annual average of 31.6 notifications for the 1926-30 quinquennium. As shown in the Table below, 11, or 36.6 per cent., were males, and 19, or 63.3 per cent., females. The notifications were fewest under 1 year, and at ages 31-35 and 41-45, in each of which periods only a single case of the disease occurred. The highest number of cases notified, namely 6, occurred at ages 21 to 25.

Chicken Pox in Port-of-Spain, Notifications by age and sex for the year 1931.

Age Periods.	Males.	Females.	Total both sexes.
Under 1 year	....	1	1
1 to 5 years	2	1	3
6 to 10 years	2	3	5
11 to 15 years	....	5	5
16 to 20 years	1	4	5
21 to 25 years	3	3	6
26 to 30 years	3	....	3
31 to 35 years	....	1	1
36 to 40 years	....	....	....
41 to 45 years	....	1	1
Over 45 years	....	....	....
Total....	11	19	30

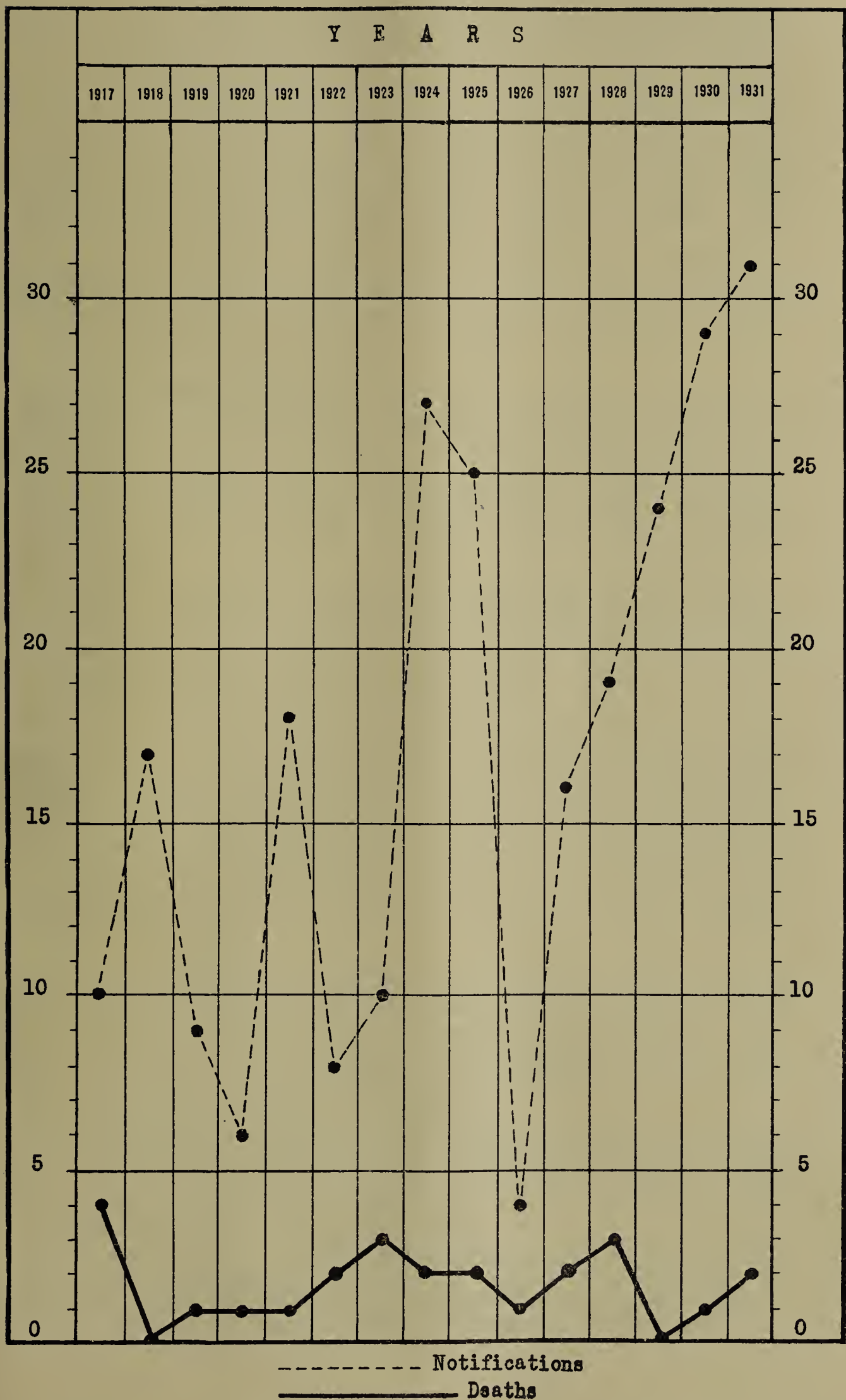
Sometimes the invasion and eruption were so severe as to suggest an alastrim infection which, however, was negatived in every case on a careful differential diagnosis being made.

In a few instances marked pitting of the face was observed after desquamation. As usual there was no mortality from the disease.

C H A R T G.

DIPHTHERIA IN PORT-OF-SPAIN.

Notifications and Deaths 1917—1931.



Ophthalmia Neonatorum.—The number of cases of this disease notified during the year was 22, compared with 29 in the preceding year and an annual average of 30 for the quinquennium 1926-30.

Ophthalmia Neonatorum was made notifiable under the Public Health Ordinance in 1925. Previous records of its prevalence are not available, nor any statistics of the extent to which the disease is responsible for blindness in the City.

Extended facilities for prenatal work among expectant mothers, and more confinements in hospital are required for the better control of this preventable disease and the dire consequences to which it exposes the new born child.

It is understood that the proposed new Medical Board Ordinance, which is in course of preparation, will provide for improvements in the course of study and training of persons desiring to become midwives, and when this is carried into effect, another weapon will have been forged to combat the blinding of the innocents by maternal infection at the time of their birth.

During Health Week Dr. Metivier drew attention to the desirability of compiling a register of the blind population of the Colony. The writer commends this suggestion as the first step towards providing an indispensable starting point for the consideration of any question that might arise of direct assistance by the Local Authority to the care of the blind.

Acute Poliomyelitis or Infantile Paralysis.—This is a specific fever the brunt of which falls on the nervous system. Five cases, 4 males and 1 female, were notified during the year with two deaths—both males—one under one year and the other under two years of age. Of the three survivors one was a boy of 12, another a girl of 2 and the third a boy under 2 years of age. There was no notification of the disease in the previous year, but one death was ascribed thereto. The death-rate worked out at 0·03 per 1,000 of the population, compared with 0·01 in 1930.

The disease may affect persons of all ages, but children of 5 and under are the usual victims. Cases more commonly occur sporadically, but may prevail in epidemic form. The channel through which the virus of the disease gains access to the human body is the naso-pharyngeal mucous membrane. This portion of the air passages is also the source from which the disease is spread to others by droplets of secretion charged with the infective virus.

Slight attacks may occur and pass unnoticed, but the persons so affected may nevertheless convey the disease to others in a severe form. Healthy carriers may be infective for a week or less, and persons actively suffering from the disease are dangerous to others, usually not longer than between the second and third week of its onset. Some outbreaks are more severe in their effects than others, and the same is true of individual attacks, which may be hardly noticeable and result in complete cure or slight muscular paralysis. On the other hand, there may be extensive paralysis of the limbs and trunk muscles, with partial or incomplete recovery. In fatal cases, death is commonly the result of paralysis of the respiratory muscles.

Measures of prevention are strict isolation of the patient, usually up to the third week of the disease, and interdiction of non-immune visitors, especially children; thorough disinfection of naso-pharyngeal secretions, sputum and other bodily discharges, soiled personal and bed linen, and all cups, spoons or other utensils used by the patient. Coupled with these precautions must be added frequent nasal douches and gargles with weak Condy's fluid, or other suitable antiseptic, by the patient and nurses in attendance.

Acute Ascending Transverse Myelitis and Rabies.—Among the circumstances which injuriously affected, or threatened so as to affect, the public health during the year, was the reappearance in certain parts of the country of a fatal paralytic disease of animals and man definitely established by the Government Bacteriologist, Dr. Pawan, to be a form of rabies.

In man the symptoms and *post mortem* appearances are those of acute ascending transverse myelitis. A death registered to this cause in the City related to a girl patient brought from an out-district some ten miles distant for treatment at the Colonial Hospital, where she died soon after admission.

This case, it appears, was typical of a number of others which for some two or three years past had occurred, from time to time during the wet season, in the southern division of Trinidad, and been something of a puzzle.

The puzzle was all the more curious in that neighbouring cattle were also dying of symptoms ascribed to botulism, but resembling those observed in man.

Eventually it came to light that from time to time, for a considerable number of years past, cattle and other animals in certain parts of Brazil had frothed at the mouth, could not swallow and died of paralytic symptoms such as have been noticed in Trinidad.

Professor Rosenau in an old edition (1920) of his standard text book on Preventive Medicine quotes a report on an epizootic outbreak at Sao Paulo in which some 4,000 head of cattle and 1,000 horses died of similar symptoms.

According to this report, which included a statement that "the meat and hides were utilized but no mishaps have been known to follow," the disease was believed to be rabies, caused by the bites of bats which, abandoning their nocturnal habits, flew about in broad daylight, fighting and biting each other, attacking cattle and otherwise behaving as if they were mad.

This belief, it appears, was confirmed later by laboratory experiments on dogs and other animals which, in many cases, developed typical rabies after injection with emulsions of the brain and spinal cord tissues of supposedly mad bats.

Pursuing this information Dr. Pawan took the matter up some time in 1930, when it was noticed that local bats, in certain parts of the country affected with the disease, were behaving queerly during the day time, and he succeeded in carrying the Brazilian experiments an important step further by finding Negri bodies in the brain of *Artibeus planirostris trinitatis*, a small, reddish-brown, tail-less, fruit eating bat, characterised by a moderately broad skull; small, crowded incisors, of which the inner present a bilobed cutting edge; separate ears; narrow interfemoral membrane; short calcar and well-developed noseleaf.

This important finding was subsequently confirmed at the Lister Institute of Preventive Medicine in London, and other recognised research laboratories abroad.

Negri bodies are so named after the Italian investigator who discovered them, and are considered to be diagnostic of rabies. Negri and others think they are also the cause of rabies. It is not yet clear what their precise nature is, but they are believed by competent observers to be minute protozoa or, at any rate, to represent a stage in the life history of some specific protozoal organism.

In view of the importance to the health of the City of this novel mode of spread of rabic infection by bat bite, the writer sought to inform himself on the subject during his recent vacation in London and, through the kindness of Dr. O'Brien of the Colonial Office, who not long ago visited the Colony and was taken over the City's municipal institutions, was able to get useful, first hand information at the Lister Institute from Dr. Hurst who had recently investigated the cause of the disease, and collaborated with Dr. Pawan in a learned paper on bat-borne rabies.

The pathological and other specimens sent from Trinidad for investigation were kindly shown the writer by Dr. Hurst who, also, demonstrated in his research laboratory the experimental work by which he had confirmed Dr. Pawan's findings.

Since then a vampire bat, *Desmodus Rufus*, having long, sharp, projecting, V-shaped, upper incisors—highly specialized for cutting—and a rudimentary noseleaf, was caught in daylight biting the udder of an estate cow, and killed. In course of time the cow developed symptoms of paralysis and died. Meanwhile the bat's brain was removed and, by animal inoculation with its substance, proved by Dr. Pawan to have been infected with rabies, a result by which the infectivity of at least two different species of bats—fruit-eater and blood-sucker—was established.

Leaflets descriptive of the disease in man and animals, with useful advice regarding its prevention, have been issued by the Central Board of Health for public information, especially in country districts; but it is well that they should be studied with care by the people of Port-of-Spain, even though living conditions in that centre are such as to make the risks of human beings being bitten by rabid bats remote.

In a typical human case described to the writer, the patient, a peasant woman of good intelligence, gave a definite history of having been bitten by a bat, about a month previously, on her left foot. At that time cattle were dying in the neighbourhood of her place of abode from inability to swallow and paralysis of the limbs. Nearly a month afterwards the patient felt numbness in the left leg, pains and cramp; subsequently the whole limb became numb and completely paralysed. At this stage she began to experience a peculiar feeling in the right leg and was taken to hospital about noon. On examination the left lower extremity was completely paralysed and anaesthetic. Anaesthesia also extended all over her abdomen, and she had no abdominal reflex. Knee jerks were absent on both sides, but there was no paresis or anaesthesia in the right limb. She said she could stand on it. By evening the dorsum of her right foot was anaesthetic and markedly paretic. She had difficulty in micturition and her bowels could not be made to act.

In the forenoon of the next day her abdomen showed signs of distension, and there was slight respiratory embarrassment. Later in the day the paresis of the right limb was more marked, hardly any movement being possible, and the bladder was completely paralysed.

In the evening her temperature, which had risen steadily since she came under treatment, was 105°F., pulse 120.

The following morning, the distension of the abdomen was great, breathing more difficult, and she showed signs of anaesthesia, weakness and inco-ordination of the upper extremity. She lingered on during the day, the anaesthesia and weakness creeping higher, until by evening her arms became completely paralysed. The scanty urine, which had on admission been free from albumin, was now loaded with it, due, no doubt, to the severance of the renal nerve supply. By this time the patient was utterly unable to swallow and, with her mind clear to the end and apprehensive of disaster, she died before midnight of respiratory failure.

It was noticed that although there was at first difficulty and, subsequently, inability to swallow, at no time was there any hydrophobia in the literal sense.

Post mortem, practically the whole spinal cord was found to be destroyed and in such a fluid state that it could hardly be cut.

According to the Government Veterinary Surgeon, the symptoms of the disease in cattle are at first listlessness, clumsiness in eating, constipation and slight inco-ordination in gait. Later there is salivation and nasal discharge, paralysis of the tongue and throat muscles, with consequent inability to swallow, and complete loss of co-ordination of the limbs. The animal then falls to the ground, struggles in vain to rise and, after three or four days in that helpless state, dies conscious almost to the end. With definite instances of such cases following bat bites, and the infectivity of specimens caught in the act established by the usual laboratory methods, no doubt was left as to the human and animal diseases being identical in nature and origin.

To meet this emergency anti-rabic vaccine prepared at their bacteriological laboratory is supplied by the Government free of charge to medical practitioners and veterinary surgeons for the vaccination of persons bitten, and animals bitten or exposed to attack by bats, in affected districts. The Central Board of Health's leaflet of information makes it clear that protective inoculation must be sought with the utmost promptitude after a bite, for when once the symptoms of rabic infection have commenced there is no cure, and death is certain.

Rabies being compulsorily notifiable only under the Diseases of Animals Ordinance, Chapter 256, in which cognizance is not taken of the Local Authority, there is no obligation on the part of anyone to inform that body of the occurrence of animal cases of the disease.

Obviously it is not in the interests of the public health that this should continue to be so. For example in the case of rat plague, which is another fatal disease of animals communicable to man, it cannot be doubted that the earliest possible knowledge by the Local Authority of such an invasion must be of the utmost importance to the health of the City.

The writer therefore suggests for the consideration of the Local Authority, and such action as may be resolved upon, that an amendment of section 4 of Chapter 256 by adding the words "and, in any Urban District, to the Medical Officer of Health" at the end of sub-section (b) would provide for the Local Authority being given notice "with all practicable speed" of the presence of a rabid animal in the City by any person having an animal so diseased in his possession or under his charge.

At present the law provides that the notice should be given to the Officer in charge of the nearest Constabulary Station, who in turn is required to pass on the information to such person or authority as may be prescribed.

The discovery of the spread of rabies by bat bites offers alluring possibilities for research in the fields of human and animal pathology. So far as the writer is aware nothing is known of the natural reservoir from which infected bats derive their supply of virus, nor how it is kept up. The fact that large families of wild monkeys inhabit the forests and high woods of the southern portion of Trinidad, where most of the human and animal cases of bat-borne rabies have up till now occurred, is at once suggestive and inspiring.

Knowledge is still lacking with respect to the course and extent of the disease in the bat population of the affected districts, neither is there available any co-ordinated information as to the radius of action of infected bats beyond their usual habitat, nor as to their progress from place to place.

The question of the extent, if any, to which the wild game of the Colony, some species of which might be carriers of the disease, or a modified form of it, is of special importance.

Already Professor Kraus of the State Sero-Therapeutic Institute of Vienna, who up till recently was engaged in investigating rabies in Chile, has applied the name *paralyssa*, i.e., "pararabies" to the bat-borne form, after having had an opportunity of examining specimens from Trinidad and verifying the previous findings of Dr. Pawan and Dr. Hurst.

The quarantine regulations with respect to the importation of dogs from abroad are both efficient and strictly applied, with the result that for a great number of years past there has been no case of canine rabies in the Colony. But if wild deer, for example, which are regularly chased in various parts of the country, especially in the south, are exposed to pararabies infection, hunting dogs first and, subsequently, others of the species may acquire the disease and/or become new reservoirs of the virus.

A pronouncement on the extent to which domestic animals, other than cattle and horses, have been attacked, besides being of value to stock owners, would, also, be of interest to research workers.

As the resolution of these health and economic problems is the concern of the entire Colony and must, necessarily, benefit the City, which is the principal port of entry, no less than the affected country districts, the writer respectfully recommends that definite steps be taken in the proper quarter to bring about an opportunity for the co-operation of the Local Authority, as fully as their resources may allow, in any comprehensive plan that the Government might think fit to adopt for the collection and co-ordination of information regarding bats and bat-borne rabies, the investigation of the origin and present sources of the disease, and its eradication from the Colony.

The circumstances presented by the writer respecting the importance of pararabies are such that, if the recommendation made in the next preceding paragraph be approved, a great opportunity may be afforded the Local Authority not only of aiding the prevention of human and animal suffering, and material loss from the disease, but, also, of furthering the prestige of British scientific research.

NON-NOTIFIABLE INFECTIOUS DISEASES.

Deaths under this head, as shown in Table XV, included malaria, dysentery, syphilis, influenza and ankylostomiasis. The total number registered thereto was 80, or 6.5 per cent. of the total deaths from all causes, compared with 91 deaths, equivalent to 6.9 per cent., of the total mortality in the preceding year. This year malaria contributed 38, or 47.5 per cent., of these deaths; dysentery, 18, or 22.5 per cent.; syphilis, 18, or 22.5 per cent.; influenza, 4, or 5 per cent., and ankylostomiasis, 2, or 2.5 per cent.



PLAN OF PORT OF SPAIN AND SUBURBS.

SCALE OF FEET.

INDICATE OUTDISTRICTS WITH
ANOPHELES BREEDING PLACES.

Malaria.—Thirty-eight deaths, including 15 males and 23 females, were assigned to malaria, equivalent to a death-rate of 0·54 per 1,000 population, compared with 40 deaths and a death-rate of 0·58 in the preceding year. The average annual deaths and death-rate from the disease for the 1926-30 quinquennium were, respectively, 49·6 and 0·75. The figures this year were, therefore, a decline not only on those for the previous year but, also, on the annual averages for the preceding period of five years, the latter being fairly substantial, namely, 11·6 on the deaths and 0·21 on the death-rate.

Of the 38 deaths, 12, or 31·5 per cent., occurred in the dry season—January to May inclusive, when the average monthly rainfall was 0·63 inches, and 26, or 68·4 per cent., during the wet season—June to December, when the corresponding rainfall was 7·06 inches.

The monthly distribution of the deaths was as follows:—October, 0; February and March, 1 each; January and July, 2 each; April and September, 3 each; May, November and December, 5 each and August, 7.

The distribution of deaths by age and sex given in the Table below shows that 13, or 34·2 per cent., took place among children under 11 years; 3, or 7·8 per cent., at ages 11 to 20; 10, or 26·3 per cent., at ages 21 to 40; 6, or 15·7 per cent., at ages 41 to 60 and the same number and percentage over age 60.

Deaths from Malaria by Age and Sex.

Ages.	Males.	Females.	Both Sexes.	Ages.	Males.	Females.	Both Sexes.
Under 1 year	2	1	3	31-35	3	1	4
1-5	2	6	8	36-40 ....	....	1	1
6-10	2	....	2	41-45 ....	....	3	3
11-15	1	1	2	46-50	1	1	2
16-20 ....	....	1	1	51-55 ....	....	....	....
21-25	2	1	3	56-60 ....	....	1	1
26-30	1	1	2	Over 60	1	5	6

The deaths were distributed in the sub-districts of the City as follows:—St. Clair, 0; Woodbrook, 1; Belmont, 9; East Dry River, 13; and City, 15.

All the cases, except one in which the body was viewed after death, were medically attended. Twenty cases were old febricitants with a definite history of infection outside the City. Eleven, so far as could be ascertained, had no connection with any known malarious district, and 7, among those who died in hospital, were either vagrants, or persons who could not be traced at the address given as their last place of abode. Of the 20 old febricitants 2 belonged to Venezuela where, it was ascertained, they had suffered from previous attacks of malaria.

Twenty-one, or 55·26 per cent., of the deaths took place in hospital and 17, or 44·74 per cent., died at home. (Table XVII.)

CONTROL OF MALARIA.

The writer has already referred in previous Annual Reports to the absence of actual breeding places of anopheles in the City, and pointed out that in no case over a period of years has the routine investigation of a death from malaria therein resulted in the discovery either of adult anopheles, or their breeding places, at or near the home of the deceased person. At the same time he has kept in view, and drawn attention (Annual Report for 1928, page 9) to the likelihood of these pests migrating into the City from surrounding out-districts under favourable conditions of wind and weather.

These reports are confirmed by the observations of Dr. de Verteuil, the Government Malariologist, in Council Paper 97 of 1931, which relates to a Malaria Survey carried out by him between October, 1930, and September, 1931.

Referring to the Prevention and Control of Malaria in the City of Port-of-Spain and suburbs Dr. de Verteuil says:—

“ . . . the control of malaria in the City and suburbs of Port-of-Spain under present conditions is almost absolutely dependent on the control of *anopheles tarsimaculatus* breeding places and . . . the control of the breeding places can be sharply divided . . . into:—

- (a) Local Control.— *i.e.*, control of breeding places within the City, and
- (b) Long Distance Control.— *i.e.*, control of breeding places in the suburbs and up to 1½ miles from the suburbs, *e.g.*, Laventille, St. Ann’s, Maraval, Debe, St. James and Cocorite.

Local Control.

"It is obviously not within the purview of this report to make any comments on the control of breeding places in the City of Port-of-Spain—these are dealt with by the Medical Officer of Health, Port-of-Spain—but it is impossible to refrain from commenting on the high pitch of excellence which has been attained by local control of anopheles breeding areas by the sanitary efforts of the Government up to 1916 and subsequently of the City Council. The City of Port-of-Spain stands to-day as second to none amongst large tropical towns so far as malaria is concerned, and that is due principally though not solely to local control."

Long Distance Control.

"Unfortunately we cannot be quite so free in our praises as regards the malaria control of the suburbs, not because of the absence of local control in these areas but principally because of the dangerous areas which breed *anopheles tarsimaculatus* on the outskirts of the suburbs, *i.e.*, Laventille Mangrove Swamps on the east. These result in large migration with the onset of the wet season.

During the whole of the dry season the immediate suburbs of Port-of-Spain, *i.e.*, St. James, Maraval, Debe, St. Ann's, Belmont Valley and John John Village were completely free of all breeding places. East of the City in the Laventille area anopheles breeding places were confined to a few definitely localised seeping areas in the low-lying swampy area between the Eastern Main Road and the railway line along the eastern edge of the mangrove swamp in Mendes' land near Shine's Trace. No breeding was in progress in the swamps south of the railway line from its eastern fringe to the La Basse dump due to the free tidal movement of sea water over the whole of this area.

West of the City, however, the Cocorite Farm provided a plentiful supply of anopheles breeding places during the whole of the dry season owing to the large amount of seepage which takes place at the foot of the hills along the Western Main Road in that area, thus maintaining a continuous supply of brackish water breeding places.

With the advent of the rainy season during July and August, however, the picture had completely changed and early in July breeding in two large long distance anopheles reservoirs, *i.e.*, Laventille Swamp and Cocorite Farm, began to be very intense and towards the end of July and the beginning of August a large migration of anopheles adults from these reservoirs had penetrated through the suburbs into the City itself. . . . in John John Village they could be easily found in most of the houses examined and further east in Success Village they were flying around in exceedingly large numbers.

On 30th August, I visited a number of houses on Laventille Hill north of Laventille Church (height about 500 feet above sea level) and I had no difficulty in getting adult *anopheles tarsimaculatus* on the partitions in the rooms. *There could be no doubt that the adults were flying into Port-of-Spain from the Laventille Swamp on the East of the City, a distance of about two miles.*

On 31st August, I made a close search for local breeding places in all the suburbs of the City using this as a further check to the migration and subsequent distribution of the adults with the following results: East of the City (where in December not a single larva could be found in what appeared to be ideal breeding places) breeding was exceedingly intense and larvae could be picked up in almost every conceivable collection of stagnant water from half an inch to two feet deep. They were particularly numerous on the La Basse dumping ground in brackish water.

West of the City numerous breeding places were found on the Aviation ground at Mucurapo, the Cemetery Savannah, west of the Cemetery, in Peru Village, in Extravaganza Village, at the foot of Fort George Road, in the House of Refuge Grounds and in Cocorite, whilst north and east of the City they were also found at Debe, Maraval, Cascade and Upper Belmont Valley.

In view of these findings therefore I recommend the immediate control by means of intensive oiling and the early institution of permanent local control in all the suburbs of the City as already outlined in my monthly reports and recommendations.

Long distance control of the Laventille and Cocorite breeding areas is, I think, also a measure which should engage early attention.

Recommendations for the permanent control in the Laventille area have already been dealt with by the Honourable Surgeon-General and wait the final plan by the Public Works Department. The Cocorite Farm area requires further investigation during rainy season conditions before recommendations of a permanent nature can be made but intensive oiling should be of material assistance in abating the intensity of the breeding during the malaria season."

From the facts reported by the Government Malariologist it comes to this, that while local control has been effective in preventing the breeding of anopheles from within, Port-of-Spain is nevertheless encompassed practically on all sides, as shown on the preceding plan, by anopheles breeding places from which adults of this species of mosquito have been observed to fly and, it may be supposed, become responsible for a portion, at any rate, of the morbidity and mortality caused by malaria in the City.

This is an unsatisfactory situation calling for closer co-operation between the Government and the City Council, which latter body, as it happens, is the corporate owner of some of the lands beyond the western boundary of the City where extensive anopheles breeding places have been located.

Besides considering plans for putting its own house in order with as little delay as possible, as the writer respectfully begs to advise, the matter being one of grave urgency, it also seems necessary that some machinery should immediately be set up whereby the City Council may receive regular and detailed reports of the works in progress to abate and prevent the recurrence of the nuisance and injury to the health of the City caused by the migration thereto of anopheles mosquitoes bred in the surrounding rural districts, as pointed out by the Government Malariologist.

As a preliminary step to this end the writer further suggests a conference between representatives of the City Council and the Diego Martin, St. Ann's and Tacarigua Rural Sanitary Authority, so that the Council may get a clear understanding of the nature and extent of the breeding places which menace the City, and the public mind set at rest by definite information of the programme of work, and its progress, which is being undertaken to destroy the anopheles breeding places mentioned in the malaria survey, and prevent the long distance migration of these dangerous pests to the City.

Dysentery.—There was an increase in deaths from dysentery this year, the number of fatalities being 18, compared with 11 in the previous year: the corresponding death-rates were 0·26 and 0·16, respectively, per 1,000 of the population; the death-rate, this year, however, was less than the annual average, namely 0·36, for the 1926-30 quinquennium.

Children under 1 year contributed 4 deaths—all boys—under this head, and 6 deaths—4 boys and 2 girls—at ages 1-5, the proportion of deaths at these combined ages—8 out of 10 of which were of the male sex—being 55·5 per cent. of the total mortality from the disease.

Owing to the fact that the form of the dysentery to which a death is ascribed is rarely entered on the death certificate, no precise information on this subject is available; the writer, however, has gathered from the experience of the Government Bacteriologist that amoebic and bacillary types of the disease prevail in about equal numbers, but the fatal cases are more usually bacillary.

Of the total deaths under this head 13 died at home and 5, or 27·78 per cent., in hospital, this proportion being nearly the same as in the preceding year, when it was 27·27 per cent. (Table XVII.)

Below is a tabulated statement of the mortality from the dysenteries in Port-of-Spain for 14 years, 1918-31, showing that deaths under this head have steadily declined from an annual average of 41·8 and 31·2, respectively, in the quinquennia 1918-22 and 1923-27, to 20·2 in the quadrennium, 1928-1931. A progressive decline in the death-rates is also shown in this Table, the figures for the three periods in the same sequence being 0·62, 0·48 and 0·30 per 1,000 of the population.

The curve of the deaths for 1931 is displayed in Chart H in contrast with the curves for enteric fever and diarrhoea and enteritis.

Deaths from the Dysenteries for 14 years, 1918-31.

Year.	Deaths.	Death-rates.	Year.	Deaths.	Death-rates.	Year.	Deaths.	Death-rates.
1918	43	0.63	1923	25	0.40	1928	29	0.44
1919 ...	48	0.70	1924	42	0.66	1929	23	0.34
1920	63	0.90	1925	31	0.48	1930	11	0.16
1921	31	0.50	1926 ...	31	0.47	1931	18	0.26
1922	24	0.38	1927	27	0.41			
Yearly average	41.8	0.62		31.2	0.48		20.2	0.30

Syphilis.—Deaths ascribed to syphilis dropped to 18 from a total of 30 in the previous year, with a corresponding decline in the death-rate to 0·26 from 0·44 per 1,000 population. The average annual deaths from the disease for the 1926-30 quinquennium was 42·4, and the corresponding death-rate 0·64 per 1,000 living.

The fact that deaths registered as being caused by syphilis this year were fewer by 25 than the average number for 1926-30 quinquennium, equivalent to a reduction of 0.38 in the corresponding death-rate, is a record which is worthy of special note as an indication of the good progress being made by the Government Free Clinic for Venereal Diseases. It also reflects creditably on the Ante-natal work of the Child Welfare League because of the marked reduction in deaths from congenital syphilis among infants under one year of age, compared with the average mortality from the disease for the 1926-30 quinquennium at the same age period. The Table also shows that except at ages 3-5, in which a slight increase was recorded, there was a decrease in the death-rates at all the remaining ages, the drops being most marked under one year, as already stated, and at ages 21-30, 41-50 and over 60.

Table comparing Deaths and Death-rates from Syphilis during the 1926-30 quinquennium and the year 1931, with percentages of decline at different ages.

Ages.	Average annual Deaths for 1926-30.	Deaths for 1931.	Percentage decline of Deaths in 1931. on average for 1926-30.	Average annual Death-rates per 1,000 population for 1926-30.	Death-rates per 1,000 population for 1931.	Percentage decline of Death-rates in 1931 on average for 1926-30.
Under 1 year	12.2	3	75.4	0.18	0.04	77.7
1-2	3.0	3	—	0.05	0.04	20.0
3-5	0.2	1	increase	0.03	0.01	increase
6-10	—	—	—	—	—	—
11-20	0.8	—	100.0	0.01	—	100.0
21-30	7.2	3	58.3	0.11	0.04	63.6
31-40	6.2	4	35.4	0.09	0.06	33.3
41-50	3.8	1	73.6	0.06	0.01	83.3
51-60	4.0	2	50.0	0.06	0.03	50.0
Over 60	5.0	1	80.0	0.08	0.01	87.5
Total all ages	42.4	18	57.5	0.64	0.26	59.3

Unfortunately the deaths registered under the head of syphilis do not represent all the damage that is attributable to this great scourge of humanity. It is practically the chief cause of all deaths from aneurism, and contributes largely to the mortality from angina pectoris, cerebral haemorrhage or apoplexy, and heart disease, especially at ages under 40 or 45. It is also named as the exciting cause of cancer of the tongue, and is suspected of being the forerunner of other forms of the disease. Its tentacles even reach the unborn child and many abortions and still-births are to be placed to its discredit.

Short of exercising its lethal powers syphilis frequently maims the body and affects the mind of the unborn. It is the commonest cause of congenital heart disease and other defects and malformations present at birth; of blindness and deafness in children approaching the age of puberty; of wizened forms and stunted growth in childhood; of mental defectiveness or imbecility in the young. Moral defectiveness, sometimes expressing itself in purposeless crime or vicious propensities, is traceable in many instances to congenital or early acquired syphilitic infection.

According to a recent London report, "16 per cent. of Borstal prisoners gave evidence of syphilis, mainly congenital, and it is probable that their criminal tendencies were in some degree attributable to their syphilitic inheritance".

Later manifestations of syphilis affecting the central nervous system, such as locomotor ataxia or tabes dorsalis and general paralysis of the insane, commonly known by the initial letters G.P.I., though rarer in this Colony than the other forms of syphilis, do occur locally and, according to the views of experienced practitioners, with far greater frequency than is generally supposed. In some cases, however, it is said that the diagnosis is complicated by a history of yaws which appears to produce brain and spinal cord lesions that are indistinguishable in their effects from those resulting from syphilis.

It is also a recognized fact that, as a result of congenital syphilis, G.P.I. sometimes occurs among juveniles and adolescents of either sex, with similar symptoms to those manifested in acquired syphilis. It is not unlikely that this phenomenon accounts to a certain extent for the moral aberrations or intolerance

of restraint of youths so affected, especially in the early stage of exaltation which is characteristic of G.P.I., a disease hitherto regarded as incurable but now, by a bold achievement of medical science, rendered amenable to treatment by artificial infection of the sufferer with the parasites of malaria.

The writer hopes that enough has been said in these brief remarks on the ramifications of syphilis, and its baneful influence on the health and well-being of the inhabitants of the City, to show that an extension of the well-directed, but insufficient efforts now being made for its control, as already suggested, is a proposition deserving the fullest encouragement and support of the Local Authority.

Influenza.—Four deaths, yielding a death-rate of 0·06 per 1,000 living, were attributed to influenza, compared with 9 deaths and a death-rate of 0·13 from the disease in the preceding year. The annual average death-rate for the 1926-30 quinquennium was 0·08.

Three of the deaths occurred during the first quarter of the year, namely, one each in January, February and March; the fourth took place in December.

The mortality from influenza recorded in the first quarter appeared to be the aftermath of an outbreak of the disease of unusual severity which began in November, 1930, and was traced to some Lourdes pilgrims who had returned from France still suffering from the remains of an influenzal infection contracted in that country.

A comparison of the deaths from bronchitis, lobar pneumonia and broncho-pneumonia registered during the first quarter of this year with the mortality from these diseases in the corresponding period of the preceding year, as shown in the Table below, gives a strong impression that the 1930-31 outbreak of influenza in the City was indirectly responsible for a greater number of deaths than was specifically allocated to the disease.

Comparison of Deaths from Influenza and Respiratory diseases in first quarter of 1930 and 1931.

Year.	DEATHS FROM INFLUENZA AND RESPIRATORY DISEASES IN FIRST QUARTER.			
	Influenza.	Bronchitis.	Broncho-pneumonia.	Lobar Pneumonia.
1930	....	18	3	9
1931	3	22	6	13

Ankylostomiasis.—As mentioned in previous reports, this disease is not a City problem, the existing control of the disposal of faecal matter making it impossible for hookworms to find easy victims.

Two deaths were allocated to the disease. In both cases death took place in hospital (Table XV) and the deceased persons were male vagrants born in India, and introduced into the Colony as agricultural labourers. The death-rate worked out at 0·03 per 1,000, compared with 0·01 in the previous year and an annual average of 0·12 for the 1926-30 quinquennium.

OTHER PRINCIPAL CAUSES OF DEATH.

Cardiac and Vascular Diseases.—Deaths registered in this group, though fewer by 11 than in the preceding year, nevertheless topped the mortality list. The number certified to these causes was 183, yielding a death-rate of 2·60 per 1,000 of the population, compared with 194 deaths and a death-rate of 2·82 in the preceding year, with an annual average of 213·4 deaths, equivalent to a death-rate of 3·20 for the 1926-30 quinquennium. Pulmonary tuberculosis, with 134 deaths and a death-rate of 1·90 per 1,000 of the population, came next in order, followed by Bright's disease and Nephritis with 80 deaths and a death-rate of 1·14. Fourth and fifth places were taken by members of the respiratory group of diseases of which bronchitis contributed 68 deaths with a death-rate of 0·97 per 1,000 population, and pneumonia and broncho-pneumonia 65 deaths, with a death-rate of 0·92.

It is worthy of note that, of a total of 9 deaths from aneurism of the aorta, no fewer than 4 were females—an unusual proportion and significant of the extent to which women are attacked by syphilis.

At different ages under 45 years there were 30 deaths from valvular diseases of the heart of which 13, or 43·3 per cent., were of the female sex. These latter included an infant under 1 year of age born with the disease—the almost certain result of parental syphilis. At ages 25-45 there were 9 deaths from cerebral haemorrhage, of which 6 were women.

The high proportion amongst women of deaths from aneurism and, also, of deaths from valvular disease of the heart at ages when syphilitic infection, congenital or acquired, is recognised as a prominent contributory cause, is further evidence of the necessity, to which attention has been drawn in this and previous reports, for increased effort in the control of syphilis generally, and specially among child-bearing women, in private medical practice as well as in ante-natal clinics.

Bright's Disease and Nephritis.—80 deaths were classed under this head equivalent to a death-rate of 1·14 per 1,000 population, as against 94 deaths and a death-rate of 1·37 in the preceding year. The annual average deaths and death-rate for the previous five years, 1926-30, were, respectively, 101·2 and 1·52.

Diarrhoeal Diseases.—Deaths from diarrhoea and enteritis numbered 55, equivalent to a death-rate of 0·78 per 1,000 of the population, as against 58 deaths, and a corresponding death-rate of 0·84 in the previous year.

The number of deaths from month to month is shown in Table VIII.

Of the 55 deaths 36, or 65·8 per cent. were among infants under 1 year, and 14, or 25·2 per cent., at ages 1-5 years. In the previous year 67·2 per cent. of the total deaths under this head related to infants under 1 year and 7·5 per cent. to children at the 1-5 age group. Under 1 year male deaths predominated being 69·4 per cent. of the total registered from diarrhoea and enteritis at that age, but among children at ages 1-5 this process was reversed and 64·2 per cent. of the deaths fell to the lot of the girls.

Deaths and death-rates from diarrhoeal diseases for the period of 14 years, 1918-31, are tabulated below, and the deaths graphically represented in Chart H., in contrast with the curves of enteric fever and dysentery for the same period.

Deaths and Death-rates per 1,000 of Population from Diarrhoea and Enteritis in Port-of-Spain for 14 years 1918-31.

Years.	Deaths.	Death-rates.	Years.	Deaths.	Death-rates.	Years.	Deaths.	Death-rates.
1918 ...	193	2.84	1923	120	1.90	1928	63	0.95
1919	162	2.35	1924	75	1.17	1929	53	0.79
1920	196	2.81	1925	71	1.10	1930	58	0.84
1921	118	1.91	1926	107	1.64	1931	55	0.78
1922	122	1.95	1927	48	0.73			
Yearly average	158.2	2.37		84.2	1.31		57.2	0.84

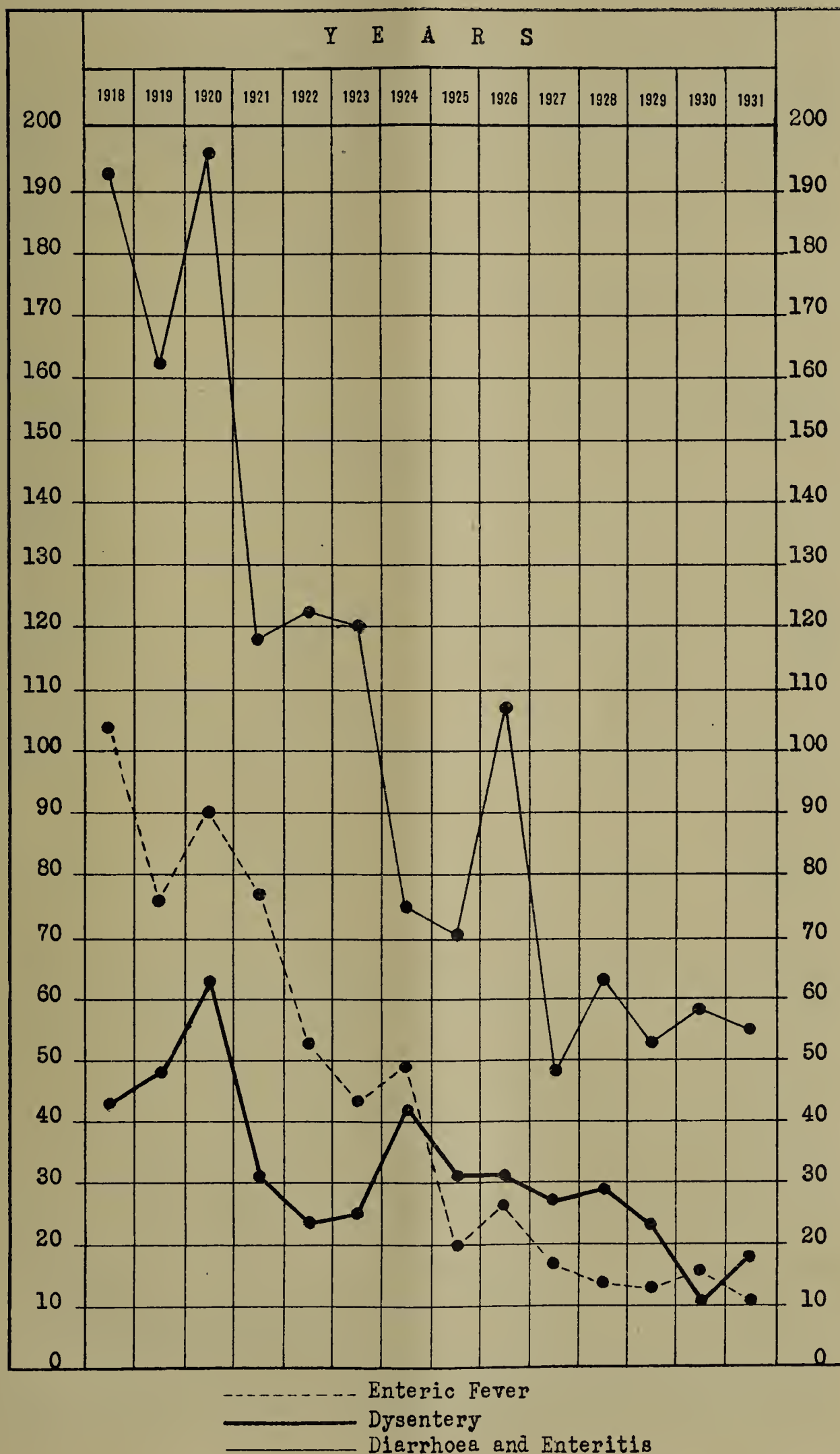
The figures in the above Table show a progressive decline in the mortality from diarrhoeal diseases, the yearly average number of deaths being 158·2 and 84·2 for the quinquennia 1918-22 and 1923-27, respectively, and 57·2 for the succeeding quadrennium, 1928-31. The corresponding death-rates for the periods named are, respectively, 2·37, 1·31 and 0·84 per 1,000 of the population.

Bronchitis.—Among the respiratory group of diseases, bronchitis contributed the highest number of deaths and took fourth place on the list of the principal killing diseases. Classed under this head were 68 deaths of which 21, or 30·9 per cent., were children comprising 17 infants—13 boys and 4 girls—under 1 year of age and 4 others—equally divided between the sexes—at ages 1-5.

The death-rate from the disease was 0·97 per 1,000 of the population, a slight decline on 0·98 for the preceding year, but quite marked on the annual average of 1·21 for the 1926-30 quinquennium.

C H A R T H.

Curves of Deaths from ENTERIC FEVER, DYSENTERY and DIARRHOEA
and ENTERITIS contrasted.
Port-of-Spain 1918—1931.



Cancer and other Malignant Diseases.—Deaths registered under this group numbered 45, equivalent to an excess of 12 over the record for the preceding year. The death-rate also increased from 0·48 to 0·64 per 1,000 of the population. The latter rate, however, was still below the annual average of 0·70 for the 1926-30 quinquennium.

There was a great preponderance of deaths from the disease among females, the number certified for this sex being 36, or 80 per cent., of the total.

The importance of syphilis as an exciting cause of cancer of the tongue and, also, of other parts of the body, such as the skin and breast, has already been alluded to, and needs to be borne in mind, since a Wasserman blood test in every case of cancer might yield important results in respect to treatment.

The age distribution of the mortality from cancer given in the Table hereunder shows how deaths of females preponderated over those of males at all the different age periods :—

Cancer : Ages at Death.

	15 and under 25.	25 and under 35.	35 and under 45.	45 and under 55.	55 and under 65.	65 and under 75.	75 and over.	Total.
Males	....	....	....	3	3	3	....	9
Females	1	2	1	7	6	13	6	36
Total	1	2	1	10	9	16	6	45

The forms and sites of the fatal cases certified during the year are classified in the following tabular statement according to sex :—

Cancer : Forms, Sites and Deaths.

CARCINOMA.				EPITHELIOMA.				SARCOMA.				GLIOMA.				VARIOUS.			
Deaths.				Deaths.				Deaths.				Deaths.				Deaths.			
Site.	M. F. Both Sexes.			Site.	M. F. Both Sexes.			Site.	M. F. Both Sexes.			Site.	M. F. Both Sexes.			Site.	M. F. Both Sexes.		
	M.	F.	Both		M.	F.	Both		M.	F.	Both		M.	F.	Both		M.	F.	Both
Breast	10	10	10	Tongue	1	2	3	Arm	1	1	1	Brain	1	1	1	Various	1	2	3
Stomach	1	9	10	Skin	1	1	1	Femur	1	1	1								
Liver	2	2	4	Scrotum	1	1	1	Uterus	1	1	1								
Intestines	2	2	2																
Uterus	2	2	2																
Cervix	1	1	1																
Gullet	1	1	1																
Rectum	1	1	1																
Throat	1	1	1																
Unspecified	1	1	1																
Total	5	28	33		2	3	5		3	3	3		1	1	1		1	2	3

It is worthy of note that deaths from cancer of the stomach among females, as shown in the Table above, were not only 9 times more frequent than amongst males, but more than doubled the number assigned to cancer of the uterus, and nearly equalled the mortality caused by cancer of the breast. The reason for this great difference in the distribution of cancer of the stomach between the sexes is not clear but, as regards the relatively small proportion of deaths from cancer of the uterus, it may be surmised that, with the spread of education in these matters within recent years, earlier notice is taken of symptoms which might raise a suspicion of cancer of that organ, and skilled treatment more promptly sought than was previously customary. In any event the writer makes no apology for repeating the following bits of advice and warning issued by the American Society for the Control of Cancer and reproduced in his previous Annual Report, viz. :—

“ A persistent lump in the breast, or continued abnormal flow or bleeding, should take a woman to a doctor forthwith.

The increased flowing which subsequently occurs at the change of life is always suspicious, as, also, its return after having stopped.

Sores, cracks, lacerations, lumps and ulcers which do not heal, warts, moles or birth marks which change colour or appearance are danger signs of cancer which demand competent medical investigation and treatment.

Persistent indigestion in middle life, with the loss of weight and change of colour, may mean internal cancer.”

It may be added that treatment by radium or X-rays has proved to be valuable in certain selected cases of cancer, but has not displaced *early* surgical treatment which, at the present stage of medical science, still holds out the best hope for the cure of this grave and stubborn malady.

The following Table shows the deaths and death-rates for cancer for 1918-31.

A comparison of the averages for the two septennial periods 1918-24 and 1925-31 emphasises the stubbornness of the disease.

Cancer: Deaths and Death-rates for 14 years, 1918-31.

Year.	Deaths.	Rate per 1,000 of population.	Year.	Deaths.	Rate per 1,000 of population.
1918	56	0.82	1925	39	0.60
1919	44	0.64	1926	48	0.74
1920	39	0.56	1927	51	0.78
1921	39	0.63	1928	48	0.72
1922	44	0.70	1929	53	0.79
1923	53	0.84	1930	33	0.48
1924	37	0.58	1931	45	0.64
Yearly average	44.5	0.68		45.3	0.68

II.—SANITARY CONDITIONS.

Rainfall.—This was a wet year. The total average rainfall of the City gauged at the three stations, St. Clair, Colonial Hospital and Constabulary Headquarters, was 52.57 inches, an excess of 11.5 inches on the rainfall for the preceding year. March was the driest month with 0.05 inches of rainfall; July the wettest, with 10.77 inches. In the previous year these distinctions also fell to March and July, respectively, the corresponding rainfall being 0.16 and 7.20 inches.

As shown in the Table below, which also gives particulars of the rainfall for the preceding year, precipitation was highest in the September quarter and lowest in the March quarter. In the preceding year these two extremes occurred in the same quarters. A comparative statement of the number of deaths from all causes for both years is also given in the Table.

Quarterly Rainfall in inches and Deaths from All Causes in 1931 and 1930.

	YEAR 1931.					YEAR 1930.				
	March quarter.	June quarter.	September quarter.	December quarter.	Total.	March quarter.	June quarter.	September quarter.	December quarter.	Total.
Rainfall	2.21	8.31	23.75	18.29	52.57	2.68	9.55	16.96	11.89	41.07
Deaths	286	305	356	276	1,223	359	334	286	329	1,308

Information of the average rainfall, as gauged from month to month at the three stations, for this and the preceding year, is given in Appendix B, Tables XIX and XX, respectively.

Sale of Milk.—No unusual prevalence of communicable disease traceable to milk sold in the City occurred during the year. The lessons in dairy sanitation taught to dairymen at the Government Farm and the demonstrations of clean milk production given at the Princes Building by the Government Veterinary Surgeon and members of his staff during succeeding observances of Health Week, have been of great assistance to the Public Health Department in controlling the production and sale of milk in the City.

There is a general improvement in the construction and condition of the City dairies, some of which are remarkably well kept. Cowkeepers have strictly carried out the bye-law which came into force at the beginning of the year requiring that the application for every licence to keep cows for the sale of milk in any place in the City shall be accompanied by a certificate from, or approved by, the Council's Inspector of Animals and Meat, to the effect that every cow in the proposed place has, within a period of six months previous to such application, come from an accredited herd or been tested by the tuberculin test without reaction.

The bye-law further provides that after the date of the granting of a licence, it shall not be lawful to bring any other cow into such licensed place without the permission in writing of the Medical Officer of Health, to be granted only upon production of a like certificate in respect of each such cow.

The elimination of tuberculous cows from dairy cattle, as provided for in this bye-law, which has also been adopted in the rural districts where most of the milk consumed in the city is produced, is a progressive measure of great value for the prevention of bovine or non-pulmonary forms of tuberculosis, and its effect will be watched with interest.

Of 229 milk vendor's licences issued, 30, or 13·1 per cent., were in respect of dairies situated within the city and 199, or 86·9 per cent. related to vendors from outdistricts. Of the dairies within the city, 5 were milk shops for the sale of milk produced in rural districts. The number of licensed cowsheds was 25, one less than in the previous year, and were distributed as follows:—City proper (sewered district) 6, East Dry River (unsewered) 1, Belmont (unsewered) 3, Woodbrook (partly sewerred) 15.

In the following Table are given the names of the rural districts from which milk is regularly supplied to the city, and the number, for each district, of milk vendor's licences, and identification badges for persons actually vending milk, issued by the Local Authority during the year.

Licences and Badges issued to Milk Vendors from Rural Districts.

Rural Districts.	Milk Vendor's Licences.	Badges.	Rural Districts.	Milk Vendor's Licences.	Badges.
San Juan and Santa Cruz	139	155	Laventille	2	2
Maraval and Debe	24	28	St. Ann's	1	1
St. James	23	26	St. Joseph	1	1
Diego Martin	3	3	Four Roads	1	1
Long Circular Road	2	5	Petit Valley	1	1
Cascade	2	3			
Total	193	220	Total	6	6

FOOD.

Sale of Foodstuffs.—The shelving in committee of the draft of the Sale of Foodstuffs Bye-laws prepared by the writer under the provisions of sub-sections 7-14 of section 156 of the Public Health Ordinance, and submitted for the consideration of the Local Authority in June, 1930, is a great disappointment. The want of some such bye-laws makes itself felt every day, and is a source of weakness in the Local Authority's control of communicable diseases in the City.

The writer pleads, as his excuse for this further reminder to the Special Committee appointed to consider and report upon the draft bye-laws, the fact that unless the necessary bye-laws, for which statutory power is given in the Ordinance, are made, the Public Health Department is powerless to prevent many glaring, insanitary practices, which are injurious to health, in places where food is prepared or sold for human consumption, and which, also, form the subject of frequent verbal and written complaints to the Department.

Saccharin in Aerated Waters.—By a circular from the Central Board of Health issued in December the Local Authority was informed of an Order in Council prohibiting the use of saccharin in the manufacture of aerated waters as from the 1st January, 1932. In accordance with the terms of the circular all owners

of aerated water factories in the City were informed of the Order. By this action a stop will have been put to the common abuse of saccharin as a sweetening agent in the preparation of the cheaper brands of soft drinks to which the Local Authority's attention was drawn by the writer in December, 1929.

Patent Aerated Water Bottles.—On the application of interested parties, the date for prohibiting the use of what are known as “patent” bottles in the aerated drinks trade was extended to the 31st March, 1932, and the applicants were definitely informed that no further permission to use these insanitary bottles will be granted thereafter.

Outbreak of Food Poisoning.—A serious outbreak of food poisoning, confined to the suburb of Belmont, began in the early hours of Sunday, the 26th April, 1931, and was traced to the consumption of soused ox cheek bought the previous Saturday evening from a hawker trading in the neighbourhood. Notice of the occurrence was given early on the following Tuesday, 28th April, by two medical practitioners who had attended some of the sufferers that morning. Investigation of the reported cases was immediately begun and, from further information received from a pharmacy in the neighbourhood, the writer succeeded in tracing 9 separate families living in 6 different streets, and comprising 47 persons, 32 of whom were affected. Particulars of the situation of the premises where the cases occurred, the total number of persons in each family and the number affected, with their age and sex, are tabulated below :—

Situation of separate premises visited.	Number of persons in family.	Number of persons affected.	Age and Sex of persons affected.	
			Males.	Females.
Jerningham Avenue	3	3	16, 34	29
Erthig Road	11	9	44, 13, 11, 8, 1 $\frac{1}{2}$	37, 7, 5, 3
Do.	7	1	—	20
Meyler Street	6	4	—	65, 27, 28, 17
Pelham Street	8	7	48, 12, 15, 10, 5, 3	36
Do.	2	1	23	—
Norfolk Street	7	4	26	34, 39, 9
Do.	2	2	37	38
St. Barb's Road	1	1	—	21
Total	47	32	16	16

With the exception of two persons who did not “remember” doing so, only those who partook of the souse suffered from the symptoms which began suddenly shortly after midnight, in nearly all the cases, with violent headache and vomiting, severe gripes, diarrhoea, acute thirst, fever and prostration. The poison was apparently one of great virulence. The mother of a family who said she had not eaten the soused meat, but had merely fished out a piece of red pepper from the sauce and rubbed it on a fish cake, which she ate, suffered severely. A girl who had “just a taste” was also severely affected.

The hawker was traced to a house in Pelham Street but had none of the original stuff left, her trade being restricted to Saturday evenings. Her account of the usual mode of preparing the souse was unsatisfactory. The ox cheek is bought on Sunday mornings to be prepared for sale on the following Saturday. During the week it is sprinkled with salt and kept in a covered tureen exposed to the sun. On the following Friday night it is steeped in water till Saturday morning, when it is boiled and, after cooling in the liquor, seasoned and dressed for sale.

Of the two persons who did not remember eating any of the stuff, one was an inmate of a house where several persons were affected, and the other lived on the opposite side of the road.

At the time of the investigation on Tuesday morning some of the cases were still in bed suffering from prostration, gripes, vomiting and diarrhoea, and one of them, a domestic servant, had to be sent to hospital immediately.

Specimens collected from several of the sufferers were sent to the Government Bacteriologist and Government Analyst. No scraps from the souse actually consumed having been available, portions of the meat in course of preparation for the following Saturday were obtained from the hawker and, also, sent for examination. The Analyst reported negatively for arsenical poisoning, which the symptoms somewhat resembled, but the Bacteriologist succeeded in establishing the presence of food poisoning bacilli of the *Salmonella* group in the specimens of vomit and bowel discharges submitted to him, but not in the new supply of ox cheek which was being prepared for sale.

This outbreak brings out the necessity for getting the proposed food bye-laws, which were prepared by the writer and referred by the Local Authority to a Special Committee for consideration and report in June, 1930, passed as early as possible. Under their provisions all sellers of foodstuffs, including souse, would have to be registered, which would make it easy to get in touch with them, see how the food is prepared for sale and give them advice as to the dangers of badly preserved meats.

Water Supply.—During the year the City was furnished with a constant and ample supply of pure, potable water from the Corporation's waterworks, testing *B. coli* in 50 cc. on 364, or 99·7 per cent., of the 365 days on which it was examined by the Government Bacteriologist. This officer's co-operation in the health control of the City, with the sanction of the Government, is of great assistance to the writer who again begs to bring his valuable services to the notice of the Local Authority.

The method of chlorinating the Maraval water supply was improved by the introduction of a Palatine Weir Recorder which measures and records the flow of water at the intake of the reservoir. With this apparatus it has become a simple matter to keep the required proportion of chlorine constant, by regulating the dosage to suit the amount of water flowing into the reservoir at any given time.

Notwithstanding the purity of the water supplied to the consumers, and the remarkable decline of enteric fever and diarrhoeal diseases which followed its purification by chlorine gas, the writer hopes to be forgiven for drawing further attention to the inadequacy of the filtration plant at St. Clair, by quoting the following extracts from his memorandum "On Improving the Filtration of the Maraval Water Supply," dated the 16th November, 1931 :—

. . . I am encouraged to bring up again for the consideration of the Local Authority the perennial subject of improving the City Water Supply. The solution of the question of its sufficiency has been advanced a notable step by the recent resolution of the Legislative Council to proceed at once with the Colony Water Scheme from which the City supply will be largely augmented. On the other hand no definite progress, since the installation of the chlorination plant, has been made in regard to improving the purity of the Maraval River water which remains a grave potential danger to the public health. This danger is mainly the result of the inadequacy of the filters at St. Clair, a fact which has on many occasions been brought to the notice of the Local Authority. Besides special reports, the writer has made repeated references to this important subject in his Annual Reports from which the following extracts are taken :—

Annual Report for 1923.— . . Reference has also been made to the danger to which the health of the City is exposed in the event of the water becoming specifically contaminated with the germs of enteric fever or other water-borne diseases against the passage of which the rapid filters at St. Clair are not a reliable defence.

Annual Report for 1925.— . . It is evident that these Bell filters of which there are 12 in use, would give more satisfactory results if their number were increased by several units. As they stand the amount of water passing through them at certain times of the day exceeds their filtration capacity, which results in a sacrifice of efficiency to rapidity of flow. This eventuality was foreseen at the time of the installation of the filters some 20 years ago, and in laying down the works space was reserved for additional units. This is an important matter which deserves the early consideration of the Local Authority.

Annual Report for 1929.— . . The writer strongly recommends that no time be lost in installing an additional battery of 12 filters at St. Clair and adopting as a permanent measure the chlorination of the Maraval water *after* filtration, as successfully carried out experimentally in April and May, 1927.

Annual Report for 1930.— . . Notwithstanding the drought of this year and the continued strain on the capacity of the Bell filters at St. Clair an uninterrupted supply of potable water of a high degree of purity was delivered to the consumers from the Corporation's waterworks. Considering the frequency with which the filters are over-worked, especially in the wet season of the year, and the disadvantageous conditions under which, pending future developments, the purification of the Maraval water supply is carried out, this record may be regarded as highly satisfactory.

These departmental warnings and recommendations are supported by the "Special Report upon the Water Supply of Port-of-Spain" submitted in 1930 by Messrs. Howard Humphreys & Sons, the London water engineers. In this report (paragraph 17) it is stated in reference to the Maraval River that "it is idle to attempt to hide the fact that there is every possibility of pollution of all kinds being introduced in it" and further, in the same paragraph it goes on to say that "the filtration of the water is clearly open to improvement. Not only do the present filters have to work much too fast at times, but there is no automatic means of checking any tendency for the flow to rise above the safe maximum. . . . There are times when the filters are in a condition to pass deleterious substances, and on such occasions the only line of defence at present is chlorination of the water at the Maraval intake." Recommendation (4) of the same report (paragraph 18) is as follows:—

That additional filters should be installed to bring the total filtration capacity at least up to the maximum flow from the Maraval River (3,500,000 gallons). The Report also points out (paragraph 17) that while each of the 12 Bell filters is designed for an output of a maximum of 5,000 gallons per hour, there are times when 12,200 gallons of water are forced through in that time, on which occasions it results that more than 50 per cent. of filtration efficiency is sacrificed to rapidity of output.

Further, the City Engineer in the final paragraph of a memorandum attached to the Humphreys Report says "I am of opinion that the system of purification in use is as good if not better than any other system which I have heard suggested so far, but I am also of opinion that the filtering plant should be extended."

This common agreement between the Humphreys Report, the City Engineer and the Medical Officer of Health on the subject of the inadequacy of the filtration plant at St. Clair seems to establish as fully as may be the imperative necessity for carrying out without further delay the recommendations which have been made for its extension, the more especially as this is an enterprise which stands by itself and, unless the Maraval waterworks are scrapped altogether, will always continue to be a necessary safeguard to the health of consumers of the City water supply.

The writer ventures to express the hope that the submissions made in that memorandum, which included practical suggestions for modernising the obsolete filters now in use by adding to the plant a further battery of twelve units of an improved type, will receive the early attention of the Special Committee to which this vital matter was referred for consideration and report.

During the summer, through the kindness of the Director of water supplies, Dr. Wirtz, the writer visited the municipal waterworks of the City of Rotterdam, and was taken over the giant, rapid gravity filtration plant nearing completion there. The largest of its kind on the continent of Europe, it is of British manufacture and designed for the pre-filtration of 23 million gallons of raw Meuse water daily.

He was, also, indebted to the kind courtesy of Sir Alexander Houston, F.R.S., for the inspection at the Barn Elms waterworks of a still larger pre-filtration plant of similar construction to the one being erected at Rotterdam, and capable of a daily turnover of 48 million gallons of raw Thames water to the slow sand filters.

At the same station he saw in operation an interesting demonstration plant for the treatment of raw water by ozone. According to the Metropolitan Water Board's laboratory tests, the results were perfect, bacteriologically.

Referring to this attractive method of purifying potable water supplies in his latest Annual Report, Sir Alexander said "Speaking generally, ozone treatment is admittedly more expensive than chlorination, but against this there must be set certain advantages.

Ozone not only produces no taste, but it would seem to have taste removing properties, and it certainly improves a water chemically and physically. Moreover, if, for any reason, it is considered desirable to increase the dose of ozone, this may be done without fear of provoking taste. It ought to be remembered as well that the cost of the purification of water is only a small percentage of the total cost of running a water undertaking, and to increase the cost by, say, one per cent., would not very materially affect the general financial situation."

HOUSING.

This year has seen the dawn of a brighter hope for the solution of the housing problem in the near future. Two events of great promise happened.

Building of Workers' Cottages.—The first was the construction by the City Council and opening by the Governor of twelve Workers' cottages on lands owned by the Corporation at South Quay.

Each of these premises is separate from its neighbour, and consists of two living rooms and an open verandah in front, with bath, kitchen and pail-closet in the yard. That the last mentioned type of sanitary convenience was unavoidable in this tropical City is nothing short of a misfortune, and emphasises, as much as anything can, the urgent necessity for the completion of the long-deferred Colony Water Scheme, on which depends the sewerage of Woodbrook, Belmont and East Dry River, in which sub-district, the cottages are situate.

These houses, which are in the nature of an experiment, are strongly built of good, cement concrete, raised three feet off the ground, provided with ample ventilation, properly finished and of good appearance. They are let at a monthly rental of four dollars each—fully fifty per cent. below the average charge for the like accommodation in the district—and were estimated to cost \$1,200 each, though it is understood that the estimate was exceeded. No doubt, from the experience gained, the cost of future municipal cottages will be considerably lower.

Joint Housing Committee.—The second notable event under the above head was the appointment by His Excellency, shortly after the writer went on vacation leave out of the Colony, of a Committee composed of joint representatives nominated by the Government and the City Council, respectively, with the Mayor as Chairman and the following terms of reference, viz. :—

“To take evidence as to the rents which are at present being paid by wage-earners occupying barrack rooms and to advise whether the type of house which is to be built at South Quay will provide a solution of slum conditions, or, alternatively, whether a housing scheme more suitable for the purpose in view can be evolved.”

At the close of the year the Committee was still deliberating and the writer, not being a member, thinks it opportune to make a re-statement of his views with respect to (1) the barrack system and (2) the relief of overcrowding in barrack yards.

The Barrack System.—As to (1) in the next preceding paragraph, the writer's views are embodied in a memorandum to the Local Authority dated the 3rd August, 1921—more than ten years ago—of which the following is a copy :—

“Plan of Proposed Barracks at No. 23, Belle Eau Road.

SECRETARY, LOCAL AUTHORITY,

The attached plan of a proposed barrack to consist of ten sets of three rooms has, in the ordinary course, been passed on to me by the City Engineer for my remarks.

2. I find that the plan is not quite in order as regards the provisions made for ventilation, but the owner being willing to do all that may be required of him under the clauses of the Public Health Ordinance which relate to the establishment of a barrack yard, the plan will, no doubt, be eventually approved.

3. I, therefore, feel it my duty to inform the Local Authority my experience as Medical Officer of Health of the City has taught me that, in spite of the improvements in construction now required under the Public Health Ordinance, the barrack system of housing is fundamentally and ineradicably bad.

4. No condemnation is too severe for a housing system which forces a large proportion of the respectable poor of this City to bring up their children in a common yard, side by side with juvenile prostitutes, loose women and men of the lowest stamp. Morally and economically it is bad for the community now, and bad, also, for the future population that this degraded standard of living should be perpetuated.

5. Every new barrack yard, lawfully established under the Public Health Ordinance, is not merely a potential slum of importance to posterity only; it is a slum *ab initio*, which, as time goes on, becomes a worse slum, because the rooms occupied in sets at first are eventually let singly, and the dangers of overcrowding are thus superadded to the evils already mentioned.

6. Under the Ordinance the essential ingredients necessary to constitute a barrack yard are rooms let singly or in sets, a common yard, common conveniences and occupants of the poorer class. The conjunction of these unpromising elements renders the maintenance of cleanliness in the barrack yards an extremely difficult task.

"7. It is true that every barrack is supposed to have a caretaker responsible for the sanitation of the premises, but control of this individual—generally an old man engaged in looking after several barracks—is not easy. He is usually irregular at his work, and in most cases does not attend to any yard oftener than three times a week. But even if here and there the yard and drains do happen to be kept tolerably clean, the sanitary conveniences are, as a rule, in a foul state, through their improper use by children, stray loafers and careless tenants. This is a constant and dangerous nuisance which gives a great deal of trouble to the Public Health Department, and favours the spread of typhoid fever and infantile diarrhoea in some of the sewered portions of the District.

8. No co-operation exists between tenants and agents as regards the sanitation of the yards. Usually both parties are opposed to each other. The tenants complain of oppression, neglect and dear rent: the agents declare the tenants to be a bad, undeserving lot, who frequently commit breaches of the barrack yard bye-laws for the deliberate purpose of getting the owner into trouble with the Local Authority.

9. It must be said in favour of the tenants that it is customary among them to scrub their floors at least once a week and keep their rooms clean; but nothing will persuade a single one of the various shades and grades of these persons of the poorer class, whom ill-chance throws together in the motley community of barrack life, to regard it as his or her business to take an interest in the sanitation of the common yard, or in the cleanliness of the common conveniences. Nor is this to be wondered at, for pride of home, as it is felt and shown even by those just a little higher up in the social scale, is impossible under the sordid, vicious and uninspiring barrack system.

10. In vain does one look for a single redeeming feature of this form of housing. It has not even the merit of being cheap, for a bare room, with hardly sufficient space for two adults and a child, readily fetches three or four dollars per month, which is much too large a proportion of the wages of a domestic servant or an unskilled labourer.

11. Section 143 of the Public Health Ordinance enacts the conditions on which the Local Authority's consent to establish a barrack yard may be granted, but, for the reasons respectfully submitted in this memorandum, I am strongly of opinion that the barrack system in Port-of-Spain is opposed to the health and progress of the population, and any further addition to the large and increasing number of barrack yards in the City should be prohibited.

12. I therefore beg to recommend that early steps be taken by the Local Authority to get the Public Health Ordinance amended, so as to make it unlawful to establish a barrack yard, or to convert any premises into a barrack yard, or to reconstruct or rebuild any existing barrack yard within the Urban Sanitary District of Port-of-Spain.

GEORGE H. MASSON,
Medical Officer of Health."

3rd August, 1921.

Relief of Overcrowding.—As to (2), the relief of overcrowding in barrack yards, the writer begs to recall the remarks on the subject on pages 19-21 of his Annual Report for 1928, of which the following are extracts:—

"The question of relieving overcrowding in the barracks may be considered under two heads:—

- (i) the rapid improvement of insanitary barracks, where necessary, by
 - (a) letting in light and air;
 - (b) raising low buildings off the ground;
 - (c) making general repairs;
- (ii) the building of small cottages to be let to persons of the working class at moderate rentals under a Municipal or a joint Government and Municipal Scheme.

(i) would in a comparatively short time effect mass improvement of the greatest importance in the health of the City, but without (ii) the benefits to be derived from (i) would not be permanent; for even with good lighting and ventilation there is a limit to the number of persons whom a barrack room 10 by 10 feet can accommodate without danger to health; and since the avowed policy of local investors in house property is not to build new houses for rent to the poorer classes, on the ground that it does not pay them to do so, overcrowding, with the continuing growth of the population would again become rampant in the improved barracks . . ."

It is a commonplace that in ordinary circumstances competition between Government and private enterprise is not desirable, but in relation to the existing shortage of housing accommodation for the poorer classes of the City, private enterprise is at a standstill, hence the question of competition would not arise if a building programme were undertaken by the Government alone, or jointly with the City Corporation.

Failing acceptance of this idea, there is still left for consideration the question of aiding, and thereby stimulating, private enterprise either, for example, by a remission of Customs duty on all materials used, granting lands free, or partly free, for building purposes, giving a bonus on each house completed, or remitting a portion of the rates by assessing such buildings on a reduced scale, with a right to restrict the rent within certain definite limits.

So far the moral aspect of overcrowding and the absence of separate sleeping rooms for growing boys and girls in barrack yards have not been touched upon. The degrading influence of these evils on the minds and bodies of the young, their baneful effects in breeding promiscuity, social disease, and crime are too well known to require labouring in this report. It seems sufficient, on these grounds alone, to urge the necessity for some combination of public effort to initiate a building scheme, whereby houses of at least three rooms may be brought within the reach of those now forced to live in barrack yards, so that the children, who should be assets of the utmost value in the development of the Colony, may be allowed to grow up amid decent surroundings, and become useful, self-respecting citizens.

Any well-co-ordinated steps towards the achievement of that end would not only be a notable advance in the uplift of the poorer, working class, but, also, a great contribution to the health and progress of the City."

In the same Report the writer, with a view to speeding up mass improvement of structural defects in barrack rooms, repeated a recommendation originally made to the Local Authority in a memorandum dated the 19th July, 1920, viz.: that power be acquired by them to recover, by means of moderate instalments spread over a long period, the cost of putting such premises into proper sanitary condition where the owner made default in carrying out the requirements of a statutory notice in that behalf.

In urging the adoption of this suggestion, the writer proceeded to say "the principle of a local authority undertaking such work on easy terms is a sound one, and is supported by the very first resolution passed at the inaugural meeting of the Inter-Allied Housing and Town Planning Congress held in London on the 4th of June, 1928, which is as follows:—

"That in the opinion of this Congress, legislative action in the preparation of a national housing policy should be taken by each Government (with, wherever necessary, special financial provision relative thereto), such programme to be carried into effect on lines of co-operation between the Government on the one hand and local authorities and other agencies—including private enterprise—on the other.

Further, this Congress is of opinion that such a housing policy should be sufficient in its scope and character to secure that within a limit of 20 years every family shall be housed under proper conditions with adequate amenities in regard to surroundings."

This recommendation was by resolution of the Local Authority forwarded to the Housing of the Working Classes Committee and ultimately enacted in the Public Health (Amendment) Ordinance, No. 4 of 1930.

In the previous year, however, before this recommendation become law, the writer in a memorandum dated the 18th November, 1929, submitted the following observations and references for the consideration of the Local Authority:—

"The writer is aware that the Local Authority has recently applied to the Government for legislative sanction to carry out the requirements of a nuisance notice and allow the cost to be paid by instalments where the owner, through poverty or other sufficient cause, is unable to do the necessary work: but obviously that is not enough. *Increased* housing accommodation for the poor worker is just as urgently needed in the City as the improvement of insanitary barracks.

The Housing Act, 1925 (15 Geo. 5. Ch. 14.), among other important provisions, empowers a local authority:—

- (a) to repair dwelling houses suitable for occupation by persons of the working classes and spread the repayment of the cost by the owners over a period not exceeding 30 years;
- (b) to acquire closed houses.

It also imposes the duty on every local authority to consider the needs of their area with respect to the provision of housing accommodation for the working classes and, as often as the occasion arises, to prepare a scheme for the exercise of their powers under the relevant part of the Act.

Under the same Act local authorities are empowered to provide housing accommodation for the working classes:—

- (a) by the erection of dwelling houses on any land acquired or appropriated by them;
- (b) by the conversion of any building into dwelling houses for the working classes;
- (c) by the acquisition of houses suitable for the purpose;
- (d) by the alteration, enlargement, repair or improvement of any houses, or buildings, on land acquired as a site for the erection of dwelling houses for the working classes, or any other houses or estate wherein interest has been acquired by the local authority.

Considering all this, and in view of the serious menace to the public health created by the insufficiency and insanitary condition of housing accommodation for persons of the poorer class in Port-of-Spain, and the absence of adequate powers in the Public Health Ordinance to deal effectively with these dangerous nuisances, the writer strongly recommends that the scope of the Housing Act, 1925, in England and Wales, be investigated as early as possible by the Local Authority, with the object of making representations to the Government for the enactment of such of the powers and duties included therein as may be considered expedient and practicable locally, with such financial provisions as may be mutually agreed upon between the Government and the City Council."

To these specific references the writer further desires to add Section 92 of the Housing Act already quoted, which relates to the conditions under which a local authority may advance loans for building purposes to

- (a) builders and others,
- (b) owner-occupiers, or
- (c) give guarantees to Building Societies for the repayment of advances made by them to any of its members desiring to build or acquire a house.

Slum clearance and re-housing, in areas where barracks and other buildings are incapable of being put in proper sanitary condition, suggest themselves as essential features for the success of the Joint Committee's undertaking, employing, if necessary, compulsory powers of acquisition in such cases, for example, as where an owner closes, or has his insanitary premises closed under a nuisance order, and declines to demolish or rebuild.

Repayment of the cost of works executed by the Local Authority on the failure of the owner of any premises to comply with the requirements of a statutory notice under the Public Health Ordinance, or of loans made by them for building purposes, would indirectly benefit the poor workers, if spread over the longest possible period, so as to permit the rents, from which such charges are to be repaid by the owners, to be fixed at minimum rates.

Another essential, which long experience of the actual conditions suggests, is that in any measures adopted for the relief of overcrowding in the City, priority should be given to the needs of the class of tenant who now pay a rental of between \$1.50 and \$3.50 per month, his plight being by far the worst of any of those who live in barrack yards.

The writer would like to hope that within the compass of these observations and references an adequate amount of material may be found, if sympathetically explored, for a workable solution of the slum question, and the evolution of a suitable housing scheme for wage-earners in the City.

Town Planning.—The writer, who was delegated by the Council to represent the Municipality at the International Town Planning and Housing Congress held in Berlin in June, 1931, unavoidably left the Colony too late to allow of his being present at the sessions of the Congress which closed the day before his arrival at the German capital. But he was fortunate in being able to visit and study the exhibits at both the Town Planning and Housing Exhibition and the German Building Exhibition held in the suburb of Charlottenburg in association with the Congress, and kept open up to the month of August.

Most of the big countries of Europe, Asia and America were represented at the Exhibition.

The keynote of all building construction was the maximum provision for the access of fresh air and sunlight to houses, whether for domestic or industrial purposes, and much ingenuity was shown in carrying out this intention. Great importance was, also, attached to the contrivance of open spaces wherever possible in cities, and their jealous preservation in places where these lungs already existed.

Local Authorities were interested not only in the utilitarian aspects of building construction, but framed their regulations with an eye to beauty as well, seizing every opportunity of improving the aesthetic appearance and amenities of their towns and villages. The wide spaces insisted upon between neighbouring houses in suburban districts greatly impressed the writer and, also, forcibly reminded him of the numerous deviations from this sound principle of suburban town planning noticeable on the Council's estate at Woodbrook, where the new cottages in this growing, residential district are frequently built uncomfortably close to each other, in many cases, two cottages, with a minimum of space between, being constructed on a single building lot divided up for the purpose.

The extension of the City boundaries to include the satellite villages of St. Ann's, St. James, Cocorite, Maraval and Laventille has, from time to time, been the subject of public discussion, and is, sooner or later, inevitable. And though it may not be possible at the present time to overcome the difficulties, almost entirely financial, which stand in the way of accomplishing this desirable object, the writer nevertheless favours the adoption of the long view of this important matter, which is essentially one for close co-operation between the Government and the City Council. He therefore trusts it may not be out of place to recommend the taking of the first steps by the last named body towards bringing about the early appointment of a Joint Town Planning Committee of Government and Municipal representatives to survey the region and plan the

lay out of Greater Port-of-Spain, with such reservations for different types of housing, public open spaces, gardens, parks, squares, recreation grounds, and, also, for river and sea-bathing, as the Committee may recommend, with the assistance of local advisers and, if needs be, the guidance of a professional expert on this modern art of town planning.

The idea of holding a West Indian Intercolonial Town Planning and Housing Conference and Exhibition is one which the writer thinks should be kept in mind by the Local Authority. Even in its present state of development Port-of-Spain, the heart of the Colony, has a great deal to show which, if properly displayed, would not only interest and, perhaps, inspire other West Indian Colonies, but, also, be a source of attraction in the tourist season to visitors from the United Kingdom and other countries of Europe, the Dominions, and North and South America.

This is not the place nor the time to go into details, but an aquarium of fresh water and Caribbean fishes, which the writer thinks, in any case, should be permanently established in the City, would not be the least of the many attractive exhibits that could be produced.

DRAINAGE.

Dry River Improvement.—The outstanding event under this head was the progress made in the work of paving the bed of the Dry River which, at the close of the year, had reached as far as Duke Street bridge.

The transformation which has so far taken place of the unhealthy eyesore that was once the Dry River bed is enough to demonstrate the wisdom of the undertaking, and the vast improvement which will be effected in the public sanitation and amenities of the district, when this excellent piece of municipal engineering work is completed.

Its success is so manifest that with the present development of St. Clair and the rapid extension of Woodbrook residences farther and farther west, the carrying out of a similar scheme for the sanitation of the Maraval River, in its course through these two suburbs, seems inevitable in the future.

Reclaimed Lands.—The Local Authority continued to spend considerable sums of money during the year in oiling collections of stagnant rain water on the reclaimed lands south of Wrightson Road for the purpose of preventing mosquito breeding. The writer has on many occasions pointed out that this object would be more effectively and economically achieved if the depressed portions of these lands were filled with suitable material and efficient drains laid to carry off storm water therefrom to the sea.

The writer strongly recommends that provision for this necessary work be made on the estimates for the coming year. He also begs to remind the Local Authority that the Committee appointed to consider his recommendations for improving the drainage and sanitary condition of the grass fields on these lands has not yet reported, with the result that, owing to the impracticability of exercising proper control over these parts of the reclaimed lands, mosquitoes continue to breed there, and are a pest and danger to the health of the district.

Mangrove and Mud Flats —It is further recommended that, for the purpose of abolishing an important mosquito breeding place, the clumps of mangrove growing on the south-eastern foreshore should be cut down and the swamps filled in with City refuse, covered with earth and drained. Similar measures are necessary in respect of the mangrove and the foul mud flats lying between the sea end of Carlos Street and the Sewerage Pumping Station, so that residents in the neighbourhood might be relieved of the offensive smells by which their houses are invested when low tides and westerly winds combine to accentuate this nuisance.

By adopting these recommendations, a much needed improvement in the sanitary condition of the eastern and western extremities of the City will be effected, and the last fringe of mangrove removed from its water front.

Sewerage and Sewage Disposal.—There was an uninterrupted water supply for all sewerage purposes during the year and the system worked perfectly.

Owing to heavy sedimentation in the shoal waters of the Gulf south of the Pumping Station, the sewerage outfall is nearly exposed at neap tides, and is at no time covered with a sufficient depth of water to ensure the sewage being

completely swept out to sea by the currents. The result is that a good deal of the mud on the Mucurapo foreshore is faecal and, consequently, offensive. This is an insanitary condition which calls for the early attention of the Local Authority.

The completion of the sewerage of the City, as stated elsewhere, depends on an augmentation of the water supply, such as is contemplated when the Colony Water Scheme is established. But it is not clear to the writer why the sewerage of the whole of Woodbrook is still delayed.

At one time it was understood that the pumping capacity of the sewerage works was insufficient for this purpose, but the recent installation of new and improved machinery at the Pumping Station has changed all that. And it does not appear that there is any deficiency in the necessary water supply, since nearly every one of the large number of new dwelling houses constructed in Woodbrook for several years past is provided with W.Cs connected with a cesspool or deep soak-away pit on the premises, and for the flushing of which quite as much water is used as on premises connected with the City sewerage system.

Owing to the high level of the ground water and other causes, the Woodbrook cesspools and pits are not always a success. Complaints of their over-flowing on the premises are made from time to time, and all of them are potential, sometimes actual, breeding places of culex mosquitoes.

Under the circumstances the writer trusts to be pardoned for once more urging upon the Local Authority the necessity for improving the sanitation of Woodbrook, by losing no time in completing the sewerage begun there some years ago, and restricted to a comparatively small portion of that suburb.

House and Street Refuse.—The work of removing house and street refuse was satisfactorily carried out during the year without complaints of uncovered carts or the spilling of their contents on the streets.

For the reasons given in previous reports, which still hold good, the writer must be excused a renewal of his plea for a round of the scavengers' carts on Sunday mornings in the overcrowded area between Park Street on the north, Marine Square on the south, Piccadilly Street and St. Joseph Road on the east and Henry Street on the west.

A general improvement has taken place in the disposal of City refuse since each day's dump is covered with a top dressing of earth. But owing to the lack of constant guidance in other technical details, there were occasions when flies bred on the dumping grounds in enormous numbers, and were a pest not only to the immediate neighbourhood, but to persons living a surprising distance beyond.

The writer is of opinion that these periodical breakdowns in the control of fly breeding at the dumping grounds can be anticipated and prevented, if the immediate supervision of this work were entrusted to a sanitary inspector who, as part of his training, is taught to dump in such a way as to diminish the offensiveness of that occupation as much as possible; who knows the life history of flies, how they breed and when special measures are necessary to prevent them from doing so on a formidable scale; and, above all, who, from his calling, not only knows, but is constantly impressed with the injury to health that might arise from the swarming of flies into the City.

The writer, therefore, begs to advise that it is not safe to continue dumping City refuse, either at Mucurapo or the La Basse, unless the work is carried out in a skilled manner, as is now done at Bradford and an increasing number of English towns, under the personal and constant supervision of a qualified sanitary inspector trained to the job.

III.—SANITARY ADMINISTRATION.

Sanitary Work.—The following is a summary of the principal items of sanitary work executed under the writer's direction and immediate supervision of the Chief Sanitary Inspector, Capt. E. W. Lack, V.D.

House to House Inspection.—96,195 visits of inspection, equivalent to an average of 8,016 per month, were made to premises in the City, including barrack yards, private dwelling houses, shops, factories, workshops, vacant lots and places where offensive trades are carried on. In the preceding year the total number of visits was 103,722 and the monthly average 8,644. (Table A.)

Results of Notices and Verbal Directions.—The requirements of notices and verbal directions were complied with in 25,083 instances, the principal results including 5,705 yards, 3,202 drains, 828 sewer basins, 1,671 dustbins, 1,331 cesspits, 800 sinks, 431 washing platforms and troughs, 270 gullies, 113 urinals and lavatories cleaned; 271 damp or swampy yards filled with earth; 6 yards paved; 102 yard pavements, 367 drains, 79 sinks, 30 sewer basins, 369 privies, 445 cesspits, 104 sewerage flush tanks, 397 dustbins, 86 barracks and 63 kitchens repaired; 1,093 sanitary dustbins provided; 907 uncovered dustbins provided with covers; 103 new drains, 56 sinks, 193 new privies and 168 new cesspits constructed; 341 privies made flyproof; 1,699 paid for cesspits oiled; 31 new sewer basins and 28 new flush tanks installed; 20 eaves gutters and 220 accumulations of manure removed; 663 premises cleared of bush; 668 trees trimmed or cut down on account of excessive shade and dampness; 291 rat holes stopped; 23 houses ventilated; 10 roofs close-boarded; 60 retail shops, 31 barracks, 34 refreshment parlours, 12 restaurants and 13 spirit shops painted; 202 retail shops, 95 barracks, 26 bakehouses, 131 parlours, 12 cowsheds, 24 cookshops, 3 provision stores and 15 spirit shops cobwebbed; 123 retail shops, 164 parlours, 49 cowsheds and 54 bakehouses scrubbed. (Table B.)

Disinfection.—Three hundred and twenty-four premises were disinfected for infectious diseases, including tuberculosis, enteric fever, pneumonia, diphtheria, chicken-pox, ophthalmia neonatorum and poliomyelitis. Five hundred and eighty-two premises, including 14 common lodging houses, were sprayed with insecticide for vermin; 1,489 premises including 1,208 privies, 21 bakehouses, 6 stables, 20 cowsheds, 31 kitchens, 135 barracks, 19 retail shops, 17 parlours, 10 aerated water factories, 8 cookshops and restaurants, 3 barber shops, 4 bathrooms, 4 tanneries, 1 garage, 1 milk room and 1 urinal were limewashed, 12,556 cesspits oiled free of charge for enteric fever, and 33 railway coaches were disinfected for leprosy and tuberculosis. (Tables C, D, E, F.)

ANTI-PLAGUE MEASURES.

Destruction of Rats and Mice.—Four sets of rat trappers, each comprising three men and an overseer, were employed throughout the year. The rat trappers operate as a regular routine measure on the quays, at the Customs warehouses, the Railway Goods Shed, provision stores, groceries, cold storage depots, hotels and restaurants, barracks yards and other likely places. In private houses traps are set or poisoned bait laid on the complaint of the occupiers or their neighbours. Rats are also bought at the rate of five cents for adults and three cents for immature specimens.

The rat trappers operate with "snap" traps in preference to cage traps which have for some time past been discarded as unsatisfactory.

The baits usually employed are bread, smoked herrings and bananas. Bait poisoned with a trade preparation of phosphorus is also laid in suitable places. Each set of trappers is equipped with a portable Clayton gassing machine for asphyxiating young rats in their holes, and driving out adults which are instantly clubbed by the trappers.

The keeping of cats at the Customs warehouses and provision stores is encouraged with good effect. One heavily infested warehouse was completely rid of rats by a wonderfully keen pair of cats.

During the year 9,075 rats were caught by the trappers and 1,806 bought, making a total of 10,881 rats collected. Of these 10,613 were examined by the Government Bacteriologist for plague bacilli, with negative results. The remaining 268 were immature rats and not examined.

Besides rats 1,699 mice were trapped and destroyed.

Monthly records are given of rats and mice destroyed in Table G, and of rats examined at the bacteriological laboratory in Table H.

Anti-Mosquito Measures.—During the wet season four sets of ladder men, each consisting of three operators, were exclusively employed in anti-mosquito work. Each unit is equipped with an extension ladder and a supply of larvicide oil. The men work from house to house inspecting eaves gutters and downpipes for stagnant water, or water containing mosquito larvae. Holes in trees liable

to catch water and breed mosquitoes also have their attention. Special visits are paid to places from which complaints of mosquitoes have been received ; a mosquito survey of the premises, and those round about, usually follows and, in practically every instance, the source of the nuisance is discovered and abolished.

By the prepayment of one shilling to the Local Authority any person may have his eaves gutters or down pipes freed from accumulations of leaves and other obstructions to the free flow of storm water.

In the dry season the ladder men are reduced from four to two sets.

At all times reports of the presence of mosquitoes (or flies) on any premises are welcomed by the Department and receive prompt attention.

It is part of the routine duty of every sanitary inspector to enforce the anti-mosquito bye-laws in his district and, for that purpose, to report the presence of stagnant water, or receptacles capable of holding stagnant water liable to breed mosquitoes, on any premises. In bad cases, or where previous warning has been given, the offender is summoned before the City Magistrate.

Besides district sanitary inspectors and ladder men, special anti-mosquito inspectors operate throughout the year around the poorer quarters of the City. They make house to house inspections searching the yards for empty milk and sardine tins, broken crockery, coconut shells and other likely breeding places of mosquitoes. If any are found the occupier is invited to "clean up" there and then, the inspector lending a helping hand in the process. This measure worked admirably, and has gone a long way towards abolishing the unsightly and dangerous dumps that were typical of the "West Indian back yard" of bygone days.

The laddermen paid 26,870 visits to premises. Defective eaves gutters were found on 1,374 occasions ; defective eaves gutters containing water on 386 occasions, and defective eaves gutters containing water with mosquito larvae on 268 occasions.

Mosquito larvae were found in 811 instances on occupied premises in tubs, antiformicas, empty milk or sardine tins, &c., and the nuisance abated there and then. 20 defective eaves gutters were removed and holes containing water in 9 trees filled with cement. Mosquito breeding in disused cement barrels and paint pots was a fairly common nuisance in places where building operations were going on.

On 28 occasions mosquito larvae were found in sewer basins and sewerage flush tanks in unoccupied houses and the nuisance abated.

27,819 gallons of crude, and 3,477 gallons of distillate, oil were used during the year in spraying pools, drains and swampy lands in Woodbrook, East Dry River, Belmont and the City foreshore to check the breeding of mosquitoes in these places.

Reports to Water and Sewerage Department.—Table L shows from month to month the number of leaks, defective taps, chokes and other defects noticed by sanitary inspectors in the course of their daily rounds and reported to the Water and Sewerage Department. These reports, aggregating 703, were equivalent to an average of 59 per month.

Sanitation of Eastern Market.—The scavenging and cleansing of the Eastern Market is done daily under the personal supervision of the Chief Sanitary Inspector.

Unsound Food.—Under the provisions of Part X (a) of the Public Health Ordinance relating to unsound food, the following articles were seized and destroyed, viz.: baked beans and pork, 48 tins ; cocoa, 10 tins ; condensed malted milk, 174 tins ; fancy biscuits, 44 tins and 23 packets ; hams, 27 ; herrings, 17 barrels ; pigs' heads, 3 barrels ; jam, 4 tins ; mixed vegetables, 2 tins ; sardines, 164 tins ; tasajo, 83 pounds ; tomato paste, 11 tins.—(Table G.)

Prosecutions.—230 informations for various breaches of the Public Health Ordinance and bye-laws made thereunder were laid, and fines amounting to £71 18s. 6d. imposed by the City Magistrate in respect of 224 convictions.—(Table M.)

The Tables relating to this part of the Report appear in Appendix C.

Observance of Health Week.—As in previous years Health Week was observed in the month of October, and the following is a copy of the Special Committee's Report thereon :—

REPORT ON THE OBSERVANCE OF HEALTH WEEK IN THE CITY.

19TH OCTOBER, 1931.

1.—At a meeting of the City Council sitting as the Local Authority for the City of Port-of-Spain, held on the 21st May, 1931, a communication from the Secretary to the Health Week Committee of the Royal Sanitary Institute of Great Britain was read, inviting the Council to join again, as in previous years, in the observance of Health Week during the month of October.

2.—The Council appointed a special committee to organise and carry out all necessary arrangements for the observance of Health Week. The Members of the Committee were His Worship the Mayor (the Honourable A. A. Cipriani) as Chairman, the Deputy-Mayor (Councillor M. Rigsby), Councillor T. P. Achong, Dr. E. Prada (Town Clerk), Mr. T. H. Scott (City Engineer), Dr. G. H. Masson (Medical Officer of Health), the Surgeon-General (the Honourable Dr. K. S. Wise), the Deputy Surgeon-General (Dr. C. F. Lassalle), Dr. V. M. Metivier, the President of the Child Welfare League (Mr. C. W. W. Greenidge), the President of the Medical Board (Dr. S. M. Laurence), the President of the Tuberculosis Association (Archdeacon Hombersley), the Director of Education (the Honourable F. C. Marriott), the President of the Coterie of Social Workers (Miss A. Jeffers, M.B.E.), the President of the Dental Association (Dr. O. Senior) with Mr. R. L. Power of the Town Clerk's Office (Secretary). The President of the Dental Association expressed his inability to serve on the Committee. Before the arrival of Health Week Dr. G. H. Masson (Medical Officer of Health) went on vacation leave and Dr. E. N. Darwent who had been appointed to act for him took his seat on the Committee. Mr. R. L. Power, the Secretary, also found it necessary to go on sick leave and Mr. H. W. Farrell of the Town Clerk's Office acted as Secretary in his place. Shortly before Health Week the Mayor fell ill with typhoid fever while in Grenada, and the Deputy-Mayor therefore performed the duties of Chairman.

3.—The Committee met on the 1st September, 1931, when an organising Sub-Committee was appointed under the chairmanship of the Acting Medical Officer of Health to arrange and carry out a programme on the same lines as last year's. A further meeting of the Committee was held on the 23rd September, 1931 to consider a recommendation of the Organising sub-committee that no Health Exhibition be held this year.

4.—Owing to the absence from the Colony of some of those persons who usually looked after different sections of the exhibition, it was found impracticable to arrange a number of stalls sufficient to make the exhibition interesting and the Committee with regret had to adopt the recommendation of their sub-committee and hold no exhibition.

5.—Health week commenced on Saturday, 10th October, with an exhibition of Health films at the Prince's Building at 8.30 p.m. at which His Excellency the Governor, Sir A. C. Hollis, K.C.M.G., and Lady Hollis were present.

Replying to an address of welcome by the Deputy-Mayor, His Excellency formally opened the year's Health Week campaign and wished it all success.

The Fly film, the Dental film, Giro the Germ film, the Breakfast Shed films and the Dry River film were then shown. Dr. Lassalle introduced the Fly Film with a short address on the dangers of the common house fly; Dr. M. A. Chu-Chong introduced the Dental film with some suitable remarks on the care of teeth, and Dr. Laurence gave a short address on the war the Government is always waging against quarantinable diseases. A proposed address on bacteria did not take place owing to the illness of Dr. J. L. Pawan, who had undertaken to give a short address as an introduction to the film "Giro the Germ."

6.—As customary, an invitation was extended to the heads of the several religious denominations in the City to suggest to their respective clergy that some appropriate reference to the objects of Health Week might be made in the course of the sermons delivered in the different churches on the Sunday, and that suitable instructions on the same subject might be included in the teaching given in the Sunday Schools on that day.

7.—In addition to arranging for the delivery of addresses and lectures to pupils of the colleges and secondary and intermediate schools, arrangements were also made for addresses to the senior students of the elementary schools. The Director of Education and Dr. C. F. Lassalle arranged the assembling of the children at the following school buildings :—Moulton Hall School, Eastern Government School, Western Boys' R.C. School and Piccadilly E.C. School and they were addressed by Dr. F. L. Patrick (two addresses) and Drs. P. L. Lai-Fook and E. Camps (one address each).

8.—On three evenings in the week cinema films were shown by Mr. Louis Tucker in Woodford Square. Through the courtesy of the Surgeon-General and the Deputy Surgeon-General all the films on health subjects in their possession were placed at the disposal of the Committee. The City Council also allowed their film of the Dry River Scheme to be shown and the Breakfast Shed film was also lent by Miss A. Jeffers, M.B.E. (President of the Coterie of Social Workers). It was thus possible to arrange a different programme on each night. These shows were attended by large and appreciative audiences and formed a very important and successful part of the Health Week Programme.

9.—As in former years, arrangements were made for the delivery of addresses to the general public and to associations and institutions on different evenings, as follows :—

- (a) Lecture by Dr. V. M. Metivier at the Prince's Building on the Causes of Blindness.
- (b) Lecture by Dr. F. L. Shannon at the Prince's Building on the Public Health aspect of the Trinidad Milk Supply.
- (c) Lecture by Dr. S. A. Hayes at the Salvation Army Hall.
- (d) Lecture by Dr. A. D. Caldeira at the Portuguese Association.
- (e) Lectures by Dr. P. L. Lai-Fook and Dr. H. Griffin to the Workingmen's Association.

10.—On Thursday, 15th October the Trinidad Literary Club Council had arranged for an address by the Hon. K. S. Wise, Surgeon-General, to be followed by an exhibition of Health films at the Victoria Institute. Unfortunately owing to illness Dr. Wise was unable to lecture, but the showing of the films was so greatly appreciated that the hall was packed to its utmost and many were denied even standing room.

11.—Dr. T. P. Achong had promised to arrange a show of Health films at the Chinese Association in Charlotte Street. Unfortunately the films, which were to be obtained from the New York Tuberculosis and Health Association, did not arrive and for the first time there was no function during Health Week at the Chinese Association, whose Secretary, on behalf of the Association, had expressed his willingness to co-operate with the Health Week activities as in former years. Dr. Achong, however, published during Health Week in the local newspapers an interesting article entitled "Pure and Safe Milk Supply" as his contribution to Health Week.

12.—Leaflets on various subjects were distributed throughout the City as in former years, and particularly to the schools and colleges. The Director of Education was also asked to issue instructions to the head teachers of all elementary schools in the City to devote special attention to lessons on hygiene and public health during the week.

13.—During the week the customary "cleaning-up" campaign was carried out by the City Council. Owing to the fact that the Public Health Department encourages householders to clean up their yards throughout the year, and the municipality undertakes the daily removal, not only of ordinary house and kitchen refuse, but of all other kinds of domestic and garden refuse, free of charge, there was not as heavy a strain upon the scavenging department as during the first "cleaning-up" campaign a few years ago. Good use was, however, made of the offer to remove all rubbish during Health Week, as many householders availed themselves of the opportunity of giving their yards a special clean up.

14.—What may be regarded as a very satisfactory result of Health Week is that following the example of the City of Port-of-Spain, not only the boroughs of San Fernando and Arima but also many of the country districts have taken up the idea of holding a health campaign, and during Health Week the newspapers had full reports of lectures and addresses on health subjects delivered all over the Colony.

15.—In closing this report, the Committee desire to place on record their grateful appreciation of the valuable assistance rendered by all who took part in making the general observance of Health Week, 1931, the success it was; and in particular they would thank His Excellency the Governor and Lady Hollis for attending the opening function, the Inspector-General (for his kind permission to the Constabulary Band to supply the music at the opening function), and to all those who by contributing addresses or lectures assisted the movement.

16.—The following is the detailed programme of the week's events:—

Saturday, 10th October.

Cinema Exhibition of Health Films at the Prince's Building at 8.30 p.m. (His Excellency the Governor to attend and open Health Week, 1931.)

Short talks by Drs. C. F. Lassalle, S. M. Laurence and M. A. Chu-Chong in the intervals between the films.

Music by Constabulary Band.

Sunday, 11th October.

References to be made to Health Week in sermons at all Churches in the City and addresses at Sunday Schools.

Health Films at St. Joseph's Convent at 5 p.m.

Monday, 12th October.

Address to pupils of Queen's Royal College by Dr. W. E. Chinasing at the Queen's Royal College at 2.30 p.m.

Lecture at Prince's Building by Dr. V. M. Metivier at 8.30 p.m. (Alderman de Freitas in the Chair.)

Address to pupils of elementary schools at Moulton Hall School by Dr. F. L. Patrick at 3.30 p.m.

Address to pupils of elementary schools at Eastern Government School by Dr. E. Camps at 3.30 p.m.

Cinema Exhibition of Health Films at Woodford Square, 8.30 to 10 p.m.

Tuesday, 13th October.

Address to students of St. Joseph's Convent by Dr. C. F. Lassalle at 2.30 p.m. at the Convent.

Address to students of the Bishop's High School at the Prince's Building at 2 p.m. by Dr. S. M. Laurence.

Address to pupils of Harris Square Intermediate R.C. School and of Pembroke Street Intermediate R.C. School at the Pembroke Street R.C. Schoolroom by Dr. C. F. Lassalle at 3.15 p.m.

Address to students of St. Mary's College at the College at 2.30 p.m. by Dr. W. E. Chinasing.

Address to pupils of elementary schools at Western Boys' R.C. School by Dr. P. L. Lai-Fook at 3.30 p.m.

Exhibition of Health Films at Woodford Square, 8.30 to 10 p.m.

Wednesday, 14th October.

Address to pupils of Belmont Intermediate School at their school by Dr. J. E. Brown on "Personal Hygiene" at 2 p.m.

Address to pupils of Tranquillity Girls' Intermediate School at their schoolroom by Dr. Edith Wharton at 10 a.m.

Lectures to Workingmen's Association by Dr. P. L. Lai-Fook and Dr. H. Griffin at Liberty Hall, 28, Prince Street, at 8.30 p.m. (Chairman—Councillor J. S. Dayanand Maharaj.)

Exhibition of Health Films at Woodford Square, 8.30 to 10 p.m.

Thursday, 15th October.

Address to students of Tranquillity Boys' Intermediate School by Dr. F. H. Wong Fo Sue at the Prince's Building at 2 p.m.

Address to students of Holy Name Convent by Dr. J. E. A. Boucaud (Resident Surgeon, Colonial Hospital), at 2.30 p.m. at the Convent.

Exhibition of Health Films at the Victoria Institute at 8.30 p.m. Arranged by the Trinidad Literary Club Council.

Friday, 16th October.

Address to pupils of elementary schools at Piccadilly E.C. School by Dr. F. L. Patrick at 3.30 p.m.

Lecture at Salvation Army Hall, Charlotte Street by Dr. S. A. Hayes at 8.30 p.m.

Lecture at Prince's Building by Dr. J. L. Shannon on "Public Health aspect of the Trinidad Milk Supply" at 8.30 p.m. (Mr. C. W. W. Greenidge in the Chair.)

Lecture at Portuguese Association Club, Richmond Street, by Dr. A. D. Caldeira at 8.30 p.m.

REPORTS, 1931.

The following is a list of the principal reports submitted by the Medical Officer of Health during the year :—

1. Regular Reports.

(a) Weekly.—Consular Sanitary Reports (U.S. Consulate)	52
(b) Monthly.—On the Health of Port-of-Spain and the work of the Sanitary Staff	12
(c) Quarterly.—On the Classification of Causes of Deaths in Port-of-Spain	4
(d) Progress.—On the Health of the City for 9 months to 30th September, 1931	1
(e) Annual.—On the Vital Statistics, Sanitary Condition and Sanitary Administration of the City of Port-of-Spain for the year 1930	1

2. Special Reports.

i. On an outbreak of Influenza in epidemic form in Port-of-Spain	1
ii. On the burial of bodies above ground at Lapeyrouse Cemetery	1
iii. On the drainage of Prescott Alley	1
iv. On prosecutions	1
v. On the drainage of Rivon Lane	1
vi. On extending the time for prohibiting the use of Patent Soda Water bottles	1
vii. On an outbreak of Food Poisoning in Belmont	1
viii. On the cleansing of the Eastern Market	2
ix. On the mortality from Typhoid Fever in Port-of-Spain	1
x. On Anopheles Breeding Places at Mucurapo	1
xi. On Mosquito and other pests in Petra and O'Connor Streets	1
xii. On the stabling of Race Horses in the City	1
xiii. On an Aerated Water Factory at No. 2, George Street	1
xiv. On the Insanitary condition of No. 44, Henry Street	1
xv. On mosquitoes and flies at Serpentine Road and Victoria Square	1
xvi. On Infantile Paralysis	2
xvii. On School Buildings—St. Theresa and 20, Woodford Street	1
xviii. On unsound foodstuffs seized	2
xix. On a Ravine at 17, St. Francois Valley Road	2
xx. On Anti-Malaria Oil	1
xxi. On the removal of a Carcase from the Foreshore....	1
xxii. On the prevalence of Mosquitoes in Fitt Street	1
xxiii. On the flooding of Yards in Woodbrook	1
xxiv. On the filtration of the Maraval Water Supply	1
xxv. On the Renting of Lands South of Wrightson Road	1
xxvi. On a proposed Furnace at 10, Henry Street	2
xxvii. On the Elephant Grass Cultivation South of Wrightson Road	1
xxviii. On a Plan of Workers' Homes	1
xxix. On extending time to comply with Nuisance Notices	9

3. Leases in Woodbrook.

Reports on Applications for leases of land in Woodbrook	82
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4. New Buildings Plans.

Reports on Plans for New Buildings	152
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5. Building alterations and Repairs.

Reports on notices of alterations and repairs to buildings	17
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Total	363
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LEGISLATION.

During the year transverse myelitis (acute ascending) was proclaimed an infectious disease, and typhus fever an infectious and dangerous infectious disease, under the Public Health Ordinance, Cap. 98.

MEETINGS.

Except during the period of his absence on leave from the Colony, the writer attended the regular and special meetings of the Council and, also, a number of Committee meetings.

FINANCIAL.

The Revenue collected by the Public Health Department amounted to \$1,234.70, compared with \$1,450.53 in the preceding year.

A full statement of Income and Expenditure is given below :—

INCOME.

Contribution from Government	....	....	....	....	\$16,080.00
Contribution from General Purposes	....	....	....	....	16,394.50
Sale of Disinfectants	....	....	....	....	140.25
Disinfecting Cesspits	....	....	....	....	478.72
Cleaning Eaves Gutters	....	....	....	....	16.32
Sale of Milk Badges	....	....	....	....	65.76
Dairymen's Licences	....	....	....	....	18.00
Milk Vendors' Licences	....	....	....	....	54.96
Fines	....	....	....	....	449.64
Miscellaneous Receipts	....	....	....	....	7.21
From Woodbrook Estate and General Purposes for oiling pools and drains	....	....	....	....	1,650.50
Vendors' Licences—Sale of Oysters and other Shell Fish	....	....	....	....	3.84
					<hr/>
					\$35,359.70

EXPENDITURE.

<i>Staff</i>	....	....	....	....	....	....	\$22,121.88
<i>Anti-Rat Measures :</i>							
Trapping and destroying rats	....	....	....	....	....	....	2,899.69
Purchase of rats	....	....	....	....	....	....	85.00
<i>Anti-Mosquito Measures :</i>							
Inspecting eaves gutters	....	....	....	....	....	....	2,692.20
Oiling of pools and drains	....	....	....	....	....	....	1,654.72
<i>Disinfection :</i>							
Oiling cesspits	....	....	....	....	....	....	2,769.94
Spraying premises with Chemicals	....	....	....	....	....	....	895.30
Purchase of disinfectants for sale to public	....	....	....	....	....	....	80.80
<i>Other Expenditure :</i>							
Purchase of Milk Badges	....	....	....	....	....	....	42.33
Furniture	....	....	....	....	....	....	14.60
Stationery, Books, &c.	....	....	....	....	....	....	202.26
Printing	....	....	....	....	....	....	970.00
Contingencies	....	....	....	....	....	....	177.36
Telephones	....	....	....	....	....	....	160.51
Notifications of Infectious Diseases	....	....	....	....	....	....	108.24
Messenger's Uniform	....	....	....	....	....	....	60.00
Postage	....	....	....	....	....	....	9.06
Dissecting Rats—(Medical Department)	....	....	....	....	....	....	91.00
Purchase of Bicycles	....	....	....	....	....	....	120.00
Purchase of Gassing Machines	....	....	....	....	....	....	204.81
							<hr/>
							\$35,359.70

LEAVE OF ABSENCE, 1931.

Vacation Leave.

- H. St. Cyr—Sanitary Inspector—12th January to 8th February.
 J. B. Taylor—Assistant Sanitary Inspector—12th January to 8th February.
 J. Wood—Sanitary Inspector—10th February to 9th March.
 G. Charles—Sanitary Inspector—16th February to 29th March.
 J. W. Parris—Sanitary Inspector—16th March, to 26th April.
 H. Thorne—Sanitary Inspector—8th April to 19th May.
 Dr. G. H. Masson—Medical Officer of Health—5th May to 5th November.
 W. G. Williams—Sanitary Inspector—5th to 9th May.
 S. B. Nurse—Assistant Sanitary Inspector—25th May to 22nd June.
 A. Romain—Assistant Sanitary Inspector—26th May to 15th June.
 C. C. Assing—Sanitary Inspector—29th June to 26th July.
 T. Christian—Messenger—17th August to 7th September.
 O. E. Forde—Sanitary Inspector—21st September to 18th October.
 G. Ashe—Sanitary Inspector—5th October to 1st November.
 T. M. Mitchell—Sanitary Inspector—12th to 17th October.
 F. Babb—Sanitary Inspector—2nd to 29th November.
 J. E. Ferreira—Sanitary Inspector—10th November to 21st December.

Sick Leave.

- J. E. Ferreira—Sanitary Inspector—8th to 28th January, 31st August to 9th September.
 G. Charles—Sanitary Inspector—18th to 27th June.
 J. Wood—Sanitary Inspector—4th to 10th July.
 J. W. Parris—Sanitary Inspector—27th August to 6th September.

ACKNOWLEDGMENTS.

The writer begs to express his thanks to the Mayor, Aldermen and Councillors for their support in the manifold duties entrusted to him and the sanitary staff and, also, the patience with which the Council bore his not too infrequent reminders on public health matters which, in his humble judgment, were deserving of special attention.

He appreciates the care and ability shown by Dr. Darwent in the administration of the Public Health Department during his vacation leave out of the Colony and, in conclusion, is happy to record his grateful recognition of the invaluable assistance given him by the heads and other members of the office and outdoor staff, whose willing and capable services he has great pleasure in bringing to the favourable notice of the Local Authority.

I have the honour to be,

Sir,

Your obedient Servant,

GEORGE H. MASSON,
Medical Officer of Health.

Port-of-Spain, Trinidad, B.W.I.,
 Public Health Department,
 Town Hall.

22nd June, 1932.

APPENDIX A.—VITAL STATISTICS, 1931.

TABLE I.—Comparative Summary of Vital Statistics for the years 1926 to 1931.

	1926		1927		1928		1929		1930		1931		Average rate for five years 1926 to 1930.
	Population. 65,016	Rate per 1,000 population	Population. 65,573	Rate per 1,000 population	Population. 66,383	Rate per 1,000 population	Population. 67,356	Rate per 1,000 population	Population. 68,703	Rate per 1,000 population	Population. 70,462	Rate per 1,000 population	
Port-of-Spain.													
	Num- ber.		Num- ber.		Num- ber.		Num- ber.		Num- ber.		Num- ber.		
Total Births	1,833	28.20	1,753	26.73	1,868	28.14	1,895	28.13	1,935	28.16	1,956	27.76	27.87
Total Deaths	1,568	24.12	1,433	21.85	1,476	22.23	1,503	22.31	1,308	19.04	1,223	17.36	21.91
Marriages	...	...	...	...	...	...	...	...	1,819	26.48	1,639	23.26	...
Natural increase or decrease	+265	...	+320	...	+392	...	+392	...	+627	...	+733	...	+399
Deaths of Infants under 1 year	287	156.57	236	134.63	238	127.41	250	131.93	233	120.41	222	113.50	134.19
Deaths from Enteric Fever	26	0.40	17	0.26	14	0.21	13	0.19	16	0.23	11	0.16	0.26
Do. Pulmonary Tuberculosis	183	2.81	138	2.10	141	2.08	129	1.92	141	2.05	134	1.90	2.19
Do. Tuberculosis (other forms)	17	0.26	9	0.14	19	0.29	25	0.37	16	0.23	7	0.10	0.26
Do. Pneumonia and Broncho-Pneumonia	62	0.95	41	0.63	51	0.77	56	0.83	55	0.80	65	0.92	0.80
Do. Diphtheria	1	0.02	2	0.03	3	0.05	...	...	1	0.01	2	0.03	0.02
Do. Encephalitis Lethargica	...	...	...	...	...	...	...	...	1	0.01	...	...	...
Do. Acute Poliomyelitis	...	...	...	...	...	...	...	...	1	0.01	2	0.03	...
Do. Malaria	67	1.03	46	0.70	57	0.86	38	0.56	40	0.58	38	0.54	0.75
Do. Dysentery	31	0.47	27	0.41	29	0.44	23	0.34	11	0.16	18	0.26	0.36
Do. Ankylostomiasis	15	0.23	8	0.12	11	0.17	4	0.06	1	0.01	2	0.03	0.12
Do. Syphilis	65	0.99	50	0.76	31	0.47	36	0.53	30	0.44	18	0.26	0.64
Do. Influenza	...	...	6	0.09	4	0.06	8	0.12	9	0.13	4	0.06	0.08
Do. Diarrhoea and Enteritis	107	1.64	48	0.73	63	0.95	53	0.79	58	0.84	55	0.78	0.99
Do. Bronchitis	79	1.21	109	1.66	71	1.07	77	1.14	67	0.98	68	0.97	1.21
Do. Cancer and other malignant diseases	48	0.73	51	0.78	48	0.72	53	0.79	33	0.48	45	0.64	0.70
Do. Cardiac and Vascular Diseases	199	3.06	193	2.94	214	3.22	267	3.96	194	2.82	183	2.60	3.20
Do. Bright's Disease and Nephritis	11	1.70	99	1.51	120	1.81	82	1.22	94	1.37	80	1.14	1.52
Still Births	144	7.85	134	7.64	158	8.46	158	8.34	138	7.13	139	7.11	7.88
		Per 100 Live Births		Per 100 Live Births		Per 100 Live Births		Per 100 Live Births		Per 100 Live Births		Per 100 Live Births	Average rate 1926 to 1930.

TABLE II.—Showing monthly Births and Birth-rates.

Months.	Males.	Females.	Both Sexes.	Birth-rate per 1,000 population.
January	82	93	175	29.24
February	71	69	140	25.90
March	90	100	190	31.75
April	81	89	170	29.35
May	81	79	160	26.74
June	82	78	160	27.63
July	80	73	153	25.57
August	69	75	144	24.06
September	86	67	153	26.42
October	92	63	155	25.90
November	83	86	169	29.18
December	98	89	187	31.25
Total	995	961	1,956	27.76

TABLE III.—Showing monthly Deaths and Death-rates.

Months.	Males.	Females.	Both Sexes.	Death-rate per 1,000 population.
January	55	39	94	15.71
February	51	51	102	18.87
March	45	45	90	15.04
April	62	47	109	18.82
May	51	52	103	17.21
June	50	43	93	16.06
July	72	58	130	21.72
August	63	60	123	20.55
September	57	46	103	17.78
October	46	43	89	14.89
November	41	52	93	16.06
December	54	40	94	15.71
Total	647	576	1,223	17.36

Table IV.—Showing Deaths from All Causes at different age periods.

Period.	Males.	Females.	Total both Sexes.
Under 1 year	144	78	222
1- 5 years	35	40	75
6-10 do.	12	7	19
11-15 do.	7	9	16
16-20 do.	23	20	43
21-25 do.	27	34	61
26-30 do.	31	35	66
31-35 do.	31	24	55
36-40 do.	46	39	85
41-45 do.	42	22	64
46-50 do.	50	39	89
51-55 do.	34	27	61
56-60 do.	45	35	80
Over 60 years	120	167	287
Total	647	576	1,223

TABLE V.—Showing Deaths of Non-residents at Colonial Hospital.

Diseases.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Diphtheria ....	...	...	...	...	...	...	...	...	1	...	...	...	1
Enteric Fever ....	...	...	1	...	...	1	7	1	1	1	...	...	12
Pulmonary Tuberculosis	7	3	4	3	3	7	7	6	9	3	7	4	63
Tuberculosis (other forms) ....	...	...	1	...	1	...	1	...	...	...	...	...	3
Pneumonia	1	2	1	...	1	...	3	1	1	1	...	1	12
Acute Poliomyelitis ....	...	...	...	1	...	...	...	...	...	...	...	...	1
Transverse Myelitis....	...	...	...	...	1	...	...	...	...	...	...	...	1
Other causes of death	20	20	27	23	34	21	25	32	32	18	15	31	298
Total	28	25	34	27	40	29	43	40	44	23	22	36	391

TABLE VI.—Showing Monthly classification of All Causes of Death.

Causes of Death.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
I.—GENERAL DISEASES.													
(a) NOTIFIABLE INFECTIOUS DISEASES.													
Enteric Fever	3	....	4	1	....	1	1	....	....	1	....	11
Diphtheria	1	....	....	1	....	2
Membranous Croup
Pulmonary Tuberculosis	9	11	9	13	9	14	14	10	14	14	8	134
Tuberculosis (other forms)	1	1	....	....	1	2	1	1	....	....	7
Pneumonia and Broncho-Pneumonia	9	6	4	7	2	4	9	7	2	4	6	65
Chicken Pox
Ophthalmia Neonatorum
Plague
Cholera
Small Pox
Typhus Fever
Yellow Fever
Encephalitis Lethargica
Acute Poliomyelitis	1	1	....	....	....	....	....	....	....	2
Cerebro-Spinal Fever
(b) NON-NOTIFIABLE INFECTIOUS DISEASES.													
Malaria	2	1	1	3	5	4	2	7	3	....	5	38
Whooping Cough
Influenza	1	1	1	....	....	....	....	....	....	....	1	4
Dysentery	1	1	2	3	1	....	4	1	4	....	1	18
Blackwater Fever	1	1
Ankylostomiasis	1	....	....	1	....	....	....	....	....	....	....	2
Syphilis	1	1	2	3	2	1	3	2	....	....	1	18
Other Venereal diseases	1	1	2	1	....	3	3	....	1	....	....	12
Puerperal Fever	1	....	....	1	1	....	....	....	....	....	....	3
II.—OTHER DISEASES.													
(a) GENERAL DISEASES NOT INCLUDED ABOVE.													
Cancer and other Malignant diseases	3	5	2	5	3	5	4	8	1	4	3	45
Beri-Beri
Leprosy*	1	....	....	1	....	....	....	....	....	2
Other General diseases	2	6	5	4	7	6	5	1	3	4	5	53
(b) DISEASES OF THE NERVOUS SYSTEM AND ORGANS OF SPECIAL SENSE.													
Simple Meningitis	1	....	1	....	....	....	....	....	....	....	....	2
Cerebral Haemorrhage	4	6	5	....	6	1	3	1	3	3	2	37
Apoplexy	1	....	....	3	1	1	2	2	1	....	....	11
Convulsions of Children under 5 years	2	....	....	....	....	....	1	....	....	3
Tabes dorsalis	1	....	....	....	....	....	....	1
Other diseases of the Nervous System	1	....	2	4	2	3	2	4	8	....	1	27
(c) DISEASES OF THE CIRCULATORY SYSTEM.													
Cardiac and Vascular Diseases	12	17	10	23	11	15	18	15	14	17	14	183
(d) DISEASES OF THE RESPIRATORY SYSTEM.													
Bronchitis	6	8	8	4	9	4	7	5	2	7	5	68
Other Diseases of the Respiratory System	2	....	....	....	2	1	4	1	....	....	1	11
(e) DISEASES OF THE DIGESTIVE SYSTEM													
Diarrhoea and Enteritis	7	5	6	5	4	1	8	2	11	1	2	55
Cirrhosis of Liver	1	1	....	1	....	2	2	1	2	....	1	11
Other diseases of the Digestive System	4	5	4	3	8	6	7	7	5	2	3	56
(f) NON-VEREAL DISEASES OF THE GENITO-URINARY SYSTEM.													
Bright's disease	2	....	1	3	2	....	1	....	....	1	2	13
Nephritis	5	2	8	6	9	4	3	6	4	6	5	67
Other Non-Venereal Diseases	3	1	2	3	3	3	4	6	2	3	4	40
(g) DISEASES OF THE PUERPERAL STATE (other than Puerperal Fever) :													
Puerperal Eclampsia
Puerperal Haemorrhage	1	....	1
Other Puerperal Diseases	1	....	1	1	....	2	....	2	1	1	9
(h) DISEASES OF EARLY INFANCY													
(i) OLD AGE	8	14	8	6	8	13	14	8	20	6	7	124
(j) AFFECTIONS PRODUCED BY EXTERNAL CAUSES.	5	3	5	3	2	4	9	14	4	6	5	64
Burns and Scalds	1	....	....	....	....	....	....	....	1
Accidents and Injuries	1	1	....	....	1	1	1	1	1	1	....	8
Judicial Executions	1	1	....	....	....	....	....	....	1	....	3
(*) OTHER CAUSES OF DEATH	1	....	1	2	....	1	....	5	1	11
Total	94	102	90	109	103	93	130	123	103	89	93	94	1,223

* Notifiable under the Lepers Ordinance, Cap. 100.

TABLE VII.—Showing monthly Still-births and rates per 100 Live births.

Months.						No. of Still-births.	Rate per 100 Live-births.
January	....	....	....	....	....	13	7.43
February	....	....	....	....	....	13	9.29
March	....	....	....	....	....	13	6.84
April	....	....	....	....	....	7	4.12
May	....	....	....	....	....	18	11.25
June	....	....	....	....	....	7	4.38
July	....	....	....	....	....	7	4.58
August	....	....	....	....	....	6	4.17
September	....	....	....	....	....	17	11.11
October	....	....	....	....	....	11	7.10
November	....	....	....	....	....	14	8.28
December	....	....	....	....	....	13	6.95
Total....	....	....	....	....	....	139	7.11

TABLE VIII.—Showing causes of deaths of Infants under 1 year.

Diseases.					Diseases.				
1931.					1930.				
M. F. M. F.					M. F. M. F.				
Abscess	....	....	....	1	....	....	....	....	....
Acute Poliomyelitis	....	....	1	....	....	....	....	1	....
Adenitis	....	....	....	....	....	....	1	....	....
Appendicitis	....	....	....	1	....	....	....	1	....
Asphyxia	....	....	1	....	2	3	....	....	....
Asphyxia Neonatorum	....	....	....	3	....	....	....	14	10
Atrophy	....	....	2	2	2	1	....	....	....
Bronchitis	....	....	13	4	11	7	....	....	....
Cellulitis	....	....	....	1	....	....	....	1	....
Colic	....	....	....	....	1	....	....	1	....
Colitis	....	....	7	5	4	1	....	....	....
Congenital abnormality	....	....	....	....	1	....	....	10	6
Congenital Debility	....	....	22	5	24	17	....	....	....
Congenital Heart Disease	....	....	....	1	2	....	....	20	11
Congenital Syphilis	....	....	....	3	4	4	....	....	....
Convulsions	....	....	1	2	1	3	....	1	....
Dentition	....	....	2	....	2	2	....	....	1
Diarrhoea	....	....	3	2	8	4	....	....	1
Dysentery	....	....	4	....	....	2	....	....	1
Exposure	....	....	1	....	....	....	....	....	1
Gastro-Enteritis	....	....	22	9	12	15	....	1	....
General Debility	....	....	....	....	1	1	....	....	....
Haemorrhage	....	....	....	1	....	....	....	....	1
Hemorrhage from umbilical cord	....	....	1	....	....	....	....	....	1
Icterus Neonatorum	....	....	....	....	1	....	....	144	78
TOTAL					TOTAL				

Table IX.—Showing causes of death of children at ages 1 to 5.

Diseases.	1931		1930		Diseases.	1931		1930	
	M.	F.	M.	F.		M.	F.	M.	F.
Acute Poliomyelitis	1	....	....	....	Hydrocephalus ....	....	....	....	1
Anaemia	1	2	....	....	Inflammation of Intestine ....	....	....	1	....
Ascariasis	1	....	....	1	Malaria	2	6	1	2
Atrophy ....	....	....	1	2	Malnutrition....	....	....	2	1
Avitaminosis ....	....	....	....	1	Marasmus	2	4	3	4
Bronchitis	2	2	3	....	Meningitis	1	....	2	3
Colitis ....	....	2	....	....	Miliary Tuberculosis ....	....	....	1	....
Congenital Debility ....	....	1	....	....	Nephritis ....	....	2	1	1
Congenital Syphilis	4	....	1	1	Peritonitis ....	....	....	....	1
Convulsions	1	1	1	3	Pneumonia	7	4	3	5
Dentition ....	....	....	....	1	Pulmonary Congestion ....	....	1	....	....
Diarrhoea	1	1	1	....	Scalding ....	....	....	1	....
Diphtheria	1	1	....	....	Septic Stomatitis ....	....	....	1	....
Dysentery	4	2	....	....	Shock due to scalding ....	....	1	2	....
Endocarditis ....	....	....	....	1	Shock—Intussusception of Small Intestine ....	....	....	....	1
Enteric Fever ....	....	....	....	2	Tabes Mesenterica	1	....	....	....
Entero Colitis ....	....	....	1	....	Tetanus ....	....	1	....	....
Erysipelas ....	....	1	....	....	Tubercular Meningitis....	2	....	....	....
Gastritis ....	....	....	....	1	Vermes ....	....	....	3	2
Gastro Enteritis	4	8	1	3	Total	35	40	30	37

TABLE X.—Showing Infectious Diseases notified each month under Public Health Ordinance.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Diphtheria	1	....	3	1	2	3	1	3	3	5	8	1	31
Enteric Fever	4	3	5	6	4	6	2	4	8	2	1	2	47
Pulmonary Tuberculosis	14	9	13	16	14	13	11	8	10	14	10	5	137
Tuberculosis (other forms)	2	3	1	....	1	....	....	1	....	2	....	....	10
Pneumonia	6	7	7	7	7	1	10	10	3	5	4	4	71
Ophthalmia Neonatorum	3	....	2	4	4	1	2	2	1	1	1	1	22
Chicken Pox	2	8	4	3	5	....	3	2	1	1	....	1	30
Acute Poliomyelitis ....	....	....	....	1	4	....	....	....	....	....	....	....	5
Total	32	30	35	38	41	24	29	30	26	30	24	14	353

TABLE XI.—Showing Deaths from Notifiable Infectious Diseases.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Diphtheria ....	....	....	....	....	....	....	....	1	....	....	1	....	2
Enteric Fever ....	....	3	....	4	1	....	1	1	....	....	1	....	11
Pulmonary Tuberculosis	9	11	9	13	9	9	14	14	10	14	14	8	134
Tuberculosis (other forms) ....	....	1	1	....	....	....	1	2	1	1	....	....	7
Pneumonia	9	6	4	7	2	4	9	7	2	4	6	5	65
Acute Poliomyelitis ....	....	....	....	1	1	....	....	....	....	....	....	....	2
Total	18	21	14	25	13	13	25	25	13	19	22	13	221

TABLE XII.—Distribution of Cases and Deaths from Notifiable Infectious Diseases.

POPULATION.	CITY PROPER 28,689.		ST. CLAIR 1,323.		EAST DRY RIVER 17,048.		BELMONT 13,475.		WOODBROOK 9,927.	
Diseases.	Cases Notified.	Deaths.	Cases Notified.	Deaths.	Cases Notified.	Deaths.	Cases Notified.	Deaths.	Cases Notified.	Deaths.
Diphtheria	15	1	1	...	4	1	5	...	6	...
Membranous Croup ....	...	...	...	...	...	...	...	...	...	...
Enteric Fever	21	3	...	...	12	6	6	2	8	...
Plague ....	...	...	...	...	...	...	...	...	...	...
Cholera ....	...	...	...	...	...	...	...	...	...	...
Yellow Fever ....	...	...	...	...	...	...	...	...	...	...
Small Pox ....	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	69	60	...	...	30	39	20	18	18	17
Tuberculosis (other forms)	6	3	...	...	3	2	1	2	...	...
Pneumonia	23	26	...	...	26	21	16	13	6	5
Ophthalmia Neonatorum	12	...	...	...	3	...	5	...	2	...
Chicken Pox	11	...	1	...	6	...	1	...	11	...
Encephalitis Lethargica ....	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis	2	...	...	...	...	...	2	1	1	1
Cerebro-Spinal Fever ....	...	...	...	...	...	...	...	...	...	...
Typhus Fever ....	...	...	...	...	...	...	...	...	...	...
Total	159	93	2	...	84	69	56	36	52	23
Proportion per 1,000 population each sub-district	5.54	3.24	1.51	...	4.93	4.05	4.16	2.67	5.24	2.32
Proportion per 1,000 population of City	2.26	1.32	0.03	...	1.19	0.98	0.79	0.51	0.74	0.32

TABLE XIII.—Showing Deaths in Hospital from Notifiable Infectious Diseases.

Diseases.			January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.	
Diphtheria	1	....	1	
Enteric Fever	2	....	4	1	....	1	1	....	1	....	10	
Pulmonary Tuberculosis	5	7	8	8	8	6	10	10	6	12	10	5	95
Tuberculosis (other forms)	1	1	....	....	....	1	1	....	1	....	....	5
Pneumonia	6	5	2	2	2	....	7	5	1	1	3	2	36
Acute Poliomyelitis	1	....	....	....	....	....	....	....	1
Total	11	15	11	14	12	6	19	17	7	14	15	7	148

TABLE XIV.—Comparing Deaths in Hospital with Deaths at Home from Notifiable Infectious Diseases.

Diseases.	Died at Home.	Died at Hospital.	Total Deaths.	Percentage of Cases isolated in Hospital before death.	Corresponding percentages for the year 1930.
Diphtheria	1	1	2	50.00	100.00
Enteric Fever	1	10	11	90.90	87.50
Pulmonary Tuberculosis	39	95	134	70.90	63.12
Tuberculosis (other forms)	2	5	7	71.43	50.00
Pneumonia	29	36	65	55.39	65.45
Encephalitis Lethargica ....	....	....	....	....	100.00
Acute Poliomyelitis	1	1	2	50.00	—
Total	73	148	221	66.97	64.50

TABLE XV.—Showing Deaths from Non-Notifiable Infectious Diseases.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.
Malaria	2	1	1	3	5	4	2	7	3	....	5	5	38
Influenza	1	1	1	....	....	....	....	....	....	....	....	1	4
Dysentery	1	1	2	3	1	....	4	1	4	....	....	1	18
Ankylostomiasis	1	....	....	....	1	....	....	....	....	....	....	....	2
Syphilis	1	1	2	3	2	1	3	2	....	2	....	1	18
Total	6	4	6	9	9	5	9	10	7	2	5	8	80

TABLE XVI.—Showing Deaths in Hospital from Non-Notifiable Infectious Diseases.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September	October.	November.	December.	Total.
Malaria	2	....	1	2	3	....	2	4	2	....	3	2	21
Influenza ....	....	....	....	....	....	....	....	....	....	....	....	....	....
Dysentery ....	....	1	....	....	....	....	1	1	2	....	....	....	5
Ankylostomiasis	1	....	....	....	1	....	....	....	....	....	....	....	2
Syphilis	1	1	2	3	....	....	2	1	....	....	....	1	11
Total	4	2	3	5	4	....	5	6	4	....	3	3	39

TABLE XVII.—Comparing Deaths in Hospital with Deaths at Home from Non-Notifiable Infectious Diseases.

Diseases.				Died at Home.	Died at Hospital.	Total Deaths.	Percentage of Cases isolated in Hospital before death.	Corresponding percentages for the year 1930.
Malaria	....	....	....	17	21	38	55.26	30.
Influenza	....	....	....	4	....	4	....	11.11
Dysentery	....	....	....	13	5	18	27.78	27.27
Ankylostomiasis	....	....	....	....	2	2	100.	....
Syphilis	....	....	....	7	11	18	61.11	66.66
Total	....	....	....	1	39	80	48.75	39.56

TABLE XVIII.—Deaths from Diarrhoea and Enteritis.

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
7	5	6	5	4	1	8	2	11	1	2	3	55

APPENDIX B.**TABLE XIX.—Monthly Rainfall from three Stations in Port-of-Spain, with average for 1931.**

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total for year.
St. Clair	1.68	1.11	0.07	0.29	1.12	6.94	10.96	8.89	4.85	6.59	7.94	5.77	56.21
Colonial Hospital	0.23	0.98	0.00	0.07	0.56	7.12	10.16	7.25	5.04	5.82	5.59	4.33	47.15
Constab. Headquarters	1.50	0.98	0.08	0.16	0.61	8.09	11.19	7.32	5.58	6.50	7.59	4.75	64.35
Average Rainfall	1.14	1.02	0.05	0.17	0.76	7.38	10.77	7.82	5.16	6.30	7.04	4.95	52.57

TABLE XX.—Monthly Rainfall from three Stations in Port-of-Spain, with average for 1930.

Stations.	Jan.	Feb.	Mar.	April.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total for year.
St. Clair	2.70	0.08	0.31	2.38	1.85	6.35	7.12	4.94	5.82	6.27	2.59	4.87	45.28
Colonial Hospital	1.97	0.08	0.07	1.65	1.28	5.42	6.65	4.13	4.64	5.20	1.88	4.26	37.23
Constab. Headquarters	1.62	1.09	0.10	2.13	1.49	6.10	7.83	4.80	4.95	4.76	1.91	3.92	40.70
Average Rainfall	2.10	0.42	0.16	2.05	1.54	5.96	7.20	4.62	5.14	5.41	2.13	4.35	41.07

TABLE A.—Inspection of Premises, &c., by Sanitary Inspectors.

MONTHS.		Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Visits to dwelling houses and other premises		8,973	7,872	8,056	6,965	8,301	7,024	7,890	8,358	8,980	7,250	8,335	8,191	96,195
No. of Shops, Stores, Bakehouses, &c., inspected.		Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Average per month.
Provision and Meat Shops	....	121	33	146	159	216	181	177	214	131	123	237	140	165
Provision Stores	....	27	27	28	31	31	23	22	39	32	17	32	1	26
Restaurants and Cookshops	....	16	20	32	30	20	34	25	38	22	11	33	12	24
Common Lodging Houses	....	6	8	8	9	14	13	9	14	8	5	18	9	10
Dairies and Cowsheds	....	28	29	26	20	27	42	46	21	24	20	19	24	27
Stables	....	39	33	37	20	25	62	55	31	35	33	39	31	37
Schools	....	25	21	28	14	19	28	20	22	34	21	16	22	23
Dyeworks	....	4	4	5	2	3	4	3	2	2	....	4	6	3
Barber Shops	....	15	23	20	31	45	39	39	27	12	11	39	9	26
Aerated Water Factories	....	7	7	8	7	22	7	20	13	10	7	17	4	11
Other Factories	....	6	11	14	6	19	21	22	12	12	25	19	3	14
Cake and Ice Cream Shops	....	102	128	156	120	199	130	143	208	134	116	210	122	147
Fish Hawkers' Trays	....	158	177	174	108	154	137	154	153	195	134	122	190	155
Bakehouses	....	27	33	40	27	58	34	65	23	24	29	35	26	35
Bread Depots	....	19	4	4	5	2	3	2	3	4	....	4	3	4
Ice Cream Carts and Pails	....	62	53	63	38	58	40	70	42	27	52	47	76	57
Cake and other Food Hucksters' Trays	....	115	68	71	53	66	69	140	77	49	79	65	58	76

APPENDIX C.—SANITARY WORK.—CONTINUED.

TABLE A.—Inspection of Premises, &c., by Sanitary Inspectors.—Continued.

No. of Shops, Stores, Bakehouses, &c., inspected.	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Average per month.
Provision Trays and Baskets	91	72	53	23	42	44	29	28	38	37	28	39	44
Oyster Vendors' Baskets	1	4	1	1	2	3	6	2	3	3	6	3	3
Soap Factories	1	1	1	1	1	1	2	1	1	1	1	1	1
Goat Pens	43	47	40	32	39	36	41	40	39	33	34	40	39
Plantain Carts	15	16	21	6	17	6	11	7	11	34	30	29	17
Bread Carts and Baskets	25	34	24	29	31	35	65	22	28	36	46	49	35
Boats	57	23	20	14	9	25	44	44	7	45	38	4	28
Spirit Shops	25	23	31	37	36	42	25	46	22	16	30	17	29
Fry Shops	8	8	12	6	7	7	12	13	5	1	16	5	8
Hotels	7	8	9	5	11	8	13	5	6	9	11	5	8
Markets	4	3	3	3	5	7	6	8	7	4	5	4	5
Laundries	9	12	12	6	8	9	11	9	8	6	14	9	9
Tanneries	11	10	10	12	21	4	8	6	5	5	5	3	8
Garages	71	71	37	15	22	27	16	36	38	21	27	13	33
Sweet Drinks Carts	25	38	35	7	29	43	32	13	18	40	39	50	31
Public Urinals	12	11	11	3	8	4	3	7	4	4	4	....	6

TABLE B.—Results of Notices and Verbal Directions.

Yards paved	....	....	6	Barber Shops painted	....	....	5
Yard pavements repaired	....	....	102	Sweet Drinks Carts painted	....	....	14
Damp or swampy yards filled in	....	....	271	Ice Cream Carts painted	....	....	6
Yards cleaned	....	....	5,705	Hotels painted	....	....	2
Drains constructed	....	....	103	Fry Shops painted	....	....	1
Drains repaired	....	....	367	Schools painted	....	....	1
Drains cleaned	....	....	3,202	Concrete floors of Shops repaired	....	....	37
Washing Troughs cleaned	....	....	68	Concrete floors of Cookshops repaired	....	....	2
Washing Platforms cleaned	....	....	363	Concrete floors of Cowsheds repaired	....	....	21
Washing Troughs repaired	....	....	2	Concrete floors of Kitchens repaired	....	....	1
Sinks cleaned	....	....	800	Concrete floors of Parlours repaired	....	....	11
Sinks repaired	....	....	79	Concrete floors of Bakehouses repaired	....	....	17
Sinks constructed	....	....	56	Concrete floors of Stables repaired	....	....	14
Gullies cleaned	....	....	270	Stables cobwebbed	....	....	5
Lavatories cleaned	....	....	7	Shops cobwebbed	....	....	202
Sewer Basins cleaned	....	....	828	Barber Shops cobwebbed	....	....	3
Sewer Basins installed	....	....	31	Cookshops cobwebbed	....	....	24
Sewer Basins repaired	....	....	30	Refreshment Parlours cobwebbed	....	....	131
Flush Tanks repaired	....	....	104	Tanneries cobwebbed	....	....	2
Flush Tanks installed	....	....	28	Barracks cobwebbed	....	....	95
New Privies built	....	....	193	Bakehouses cobwebbed	....	....	26
Privies repaired	....	....	969	Provision Stores cobwebbed	....	....	3
Privies made fly-proof	....	....	341	Cowsheds cobwebbed	....	....	12
New Cesspits constructed	....	....	168	Spirit Shops cobwebbed	....	....	15
Cesspits repaired	....	....	445	Aerated Water Factories scrubbed	....	....	9
Cesspits emptied	....	....	1,331	Bakehouses scrubbed	....	....	54
Cesspits oiled (paid for)	....	....	1,699	Shops scrubbed	....	....	123
Urinals cleaned	....	....	106	Refreshment Parlours scrubbed	....	....	164
Accumulations of manure removed	....	....	220	Barber Shops scrubbed	....	....	27
Rat holes stopped	....	....	291	Spirit Shops scrubbed	....	....	17
Sanitary Dustbins provided	....	....	1,093	Restaurants scrubbed	....	....	4
Dustbins repaired	....	....	397	Stables scrubbed	....	....	31
Dustbins cleaned and disinfected	....	....	1,671	Cowsheds scrubbed	....	....	49
Uncovered Dustbins covered	....	....	907	Common Lodging Houses scrubbed	....	....	3
Barracks repaired	....	....	86	Hotels scrubbed	....	....	2
Kitchens repaired	....	....	63	Cookshops scrubbed	....	....	7
Kitchens built	....	....	1	Earthen floors of Shops concreted	....	....	3
Trees trimmed or cut down	....	....	668	Earthen floors of Parlours concreted	....	....	1
Premises cleared of bush	....	....	663	Earthen floors of Restaurants concreted	....	....	1
Houses ventilated	....	....	23	Earthen floors of Cookshops concreted	....	....	2
Roofs closeboarded	....	....	10	Earthen floors of Kitchens concreted	....	....	1
Bathrooms repaired	....	....	2	Earthen floors of Spirit Shops concreted	....	....	1
Barracks painted	....	....	31	Holes in trees filled with cement...	....	....	9
Retail Shops painted	....	....	60	Eaves gutters repaired	....	....	4
Refreshment Parlours painted	....	....	34	Down pipes repaired	....	....	1
Restaurants painted	....	....	12	Chimneys raised	....	....	1
Spirit Shops painted	....	....	13	Total	....	....	25,083

DISINFECTION.

TABLE C.—Premises disinfected for Infectious Diseases and Vermin.

Diseases.				January.	February.	March.	April.	May.	June.	July.	August	September	October.	November	December.	Total.
Tuberculosis	....	....	....	10	17	13	12	13	9	10	12	7	10	10	6	129
Enteric Fever	....	....	....	4	6	5	7	2	8	3	1	13	4	3	4	60
Pneumonia	....	....	....	5	5	4	6	7	2	9	6	3	5	6	3	61
Diphtheria	....	....	....	1	1	1	2	1	3	1	3	1	2	8	3	27
Leprosy	....	....	....	....	....	....	1	....	....	1	....	....	....	....	2	4
Chicken Pox	....	....	....	1	5	4	2	3	....	2	....	5	2	1	....	25
Ophthalmia Neonatorum	....	....	....	1	1	2	1	5	....	3	1	2	....	....	....	16
Acute Poliomyelitis	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	2
Total	....	....	....	22	35	29	31	33	22	29	23	31	23	28	18	324
Vermin	....	....	....	58	43	54	47	49	50	50	40	53	46	47	45	582

TABLE D.—Railway Coaches Disinfected.

Diseases.				January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Yaws	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Leprosy	....	....	....	3	1	5	....	3	2	3	3	4	3	1	4	32
Tuberculosis	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1

TABLE E.—Cesspits sprayed with Crude and Distillate Oils (Free for Infectious Disease).

Disease.		Jan.	Feb.	Mar.	April.	May.	June.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Enteric Fever	....	1,173	1,238	1,568	1,111	1,179	1,163	797	669	925	1,061	758	914	12,556

DISINFECTION.—CONTINUED

TABLE F.—Limewashing.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Privies	109	92	82	86	100	95	142	149	117	76	83	77	1,208
Cowsheds	1	1	....	....	....	3	4	2	2	2	2	3	20
Bakehouses	2	2	1	1	1	3	1	3	2	2	1	2	21
Stables	3	....	....	....	....	1	....	....	....	....	....	2	6
Kitchens	1	2	4	2	2	....	1	6	1	7	....	5	31
Barracks	6	4	1	5	15	8	11	16	16	19	18	16	135
Barber Shops ....	....	....	....	....	1	1	....	....	....	....	1	....	3
Retail Shops	2	....	....	....	....	1	1	1	....	3	4	7	19
Cook Shops	1	....	....	....	....	....	2	1	....	2	....	....	6
Parlours ....	....	1	2	....	....	3	1	3	....	2	2	3	17
Bathrooms	2	....	2	....	....	....	....	....	....	....	....	....	4
Restaurants ....	....	....	....	....	....	....	....	2	....	....	....	....	2
Aerated Water Factories	....	....	....	....	....	....	2	....	....	....	8	....	10
Tanneries ....	....	....	....	....	....	....	4	....	....	....	....	....	4
Garages ....	....	....	....	....	....	....	1	....	....	....	....	....	1
Milk Rooms ....	....	....	....	....	....	....	1	....	....	....	....	....	1
Urinals ....	....	....	....	....	....	....	1	....	....	....	....	....	1
Total	127	102	92	94	119	115	172	183	138	113	119	115	1,489

UNSOOUND FOOD.

TABLE G.—Foodstuffs seized and destroyed under the Public Health (Amendment) Ordinance, 1919.

Articles.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Baked Beans and Pork —Tins	29	19	....	....	....	....	....	....	48
Condensed and Malted Milk—Tins	114	60	....	....	....	....	....	174
Fancy Biscuits —Tins	44	....	....	....	....	....	....	44
Fancy Biscuits —Packets	23	....	....	....	....	....	....	23
Jam —Tins	1	2	1	....	....	....	4
Cocoa —Tins	10	....	....	....	....	....	10
Mixed Vegetables —Tins	2	....	....	....	2
Tomato Paste —Tins	11	....	....	....	....	....	11
Herrings —Barrels	17	....	....	....	....	....	....	17
Hams —Number....	1	26	....	....	....	....	....	27
Tasajo —Pounds	83	....	....	....	....	....	83
Sardines —Tins	127	12	25	....	....	....	164
Hogsheads —Barrels	3	....	....	....	....	....	3

ANTI-PLAGUE MEASURES.

TABLE H.—Destruction of Rats and Mice.

	Jan.	Feb.	Mar.	April	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Rats caught by trappers....	722	554	686	647	546	595	840	939	999	784	1,041	722	9,075
Rats bought	166	130	288	201	143	108	143	101	112	164	122	128	1,806
Total rats destroyed	888	684	974	848	689	703	983	1,040	1,111	948	1,163	850	10,881
Mice caught and destroyed	166	124	156	151	47	43	146	97	163	166	168	272	1,699

TABLE J.—Examination of Rats by Government Bacteriologist.

	Jan.	Feb.	Mar.	April.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Rats examined for Plague	871	651	927	824	672	690	980	976	1,104	923	1,163	832	10,613
Rats found infected with Plague ....	....	....	....	....	....	....	....	....	....	....	....	....	....
Immature rats not examined	17	33	47	24	17	13	3	64	7	25	....	18	268
Total	888	684	974	848	689	703	983	1,040	1,111	948	1,163	850	10,881

ANTI-MOSQUITO MEASURE.

Table K.—Inspection of Eaves Gutters, &c.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Total.
Number of inspections and re-inspections of premises	3,550	1,929	446	102	479	2,607	3,372	2,646	3,526	2,565	2,665	2,983	26,870
Occasions found in good order	3,450	1,859	439	98	466	2,501	3,187	2,488	3,400	2,440	2,439	2,729	25,496
Defective Eaves Gutters	100	70	7	4	13	106	185	158	126	125	226	254	1,374
Defective Eaves Gutters containing water	44	11	....	1	3	43	80	46	41	42	33	42	386
Defective Eaves Gutters containing water with larvae	18	9	2	....	....	13	39	47	29	25	31	55	268
Occasions on which mosquito larvae were found in tubs, antiformicas, tin cans, &c.	47	34	21	55	18	46	137	142	99	71	80	61	811
Eaves Gutters removed	3	....	....	1	....	1	1	7	....	5	....	2	20
Holes in trees filled with cement ....	....	....	....	....	....	....	6	1	....	....	....	2	9

TABLE L.—Reports to Water and Sewerage Department.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Total.
Leaks, defective taps, chokes, &c., reported	95	50	71	55	71	69	22	62	46	44	77	41	703

PROSECUTIONS.

TABLE M.—Cases determined by the City Magistrate and penalties imposed.

Offences.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Totals.
	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Fines. £ s. d.	Total Fines. £ s. d.
Keeping stagnant water in anti- formicas, &c...	2 10 0	4 1 0	0 ..	3 1 5	0 18	10 0	5 1 10	0 20	5 2 6	20 1 5	0 4 1	2 6 1	5 0 149
Failing to keep yard free from rubbish, tins, &c.	13 4 15	0 3 5	0 5 10	0 2 10	0 ..	..	4 5 0	2 1 10	0 ..	..	..	..	31 8 0
Failing to provide proper dustbins	1 10 0	1 5 0	3 Reprimanded	..	3 7 6	..	..	..	..	..	1 Reprimanded	..	9 1 2
Exposing foodstuffs for sale without protection from contamination	4 1 15	0 ..	3 7 6	..	2 Reprimanded	..	1 2 0	0 6 10	..	..	..	..	16 4 12
Failing to maintain sewer basins clean	..	1 5 0	..	..	..	..	..	..	..	..	1 2 6	2 5 0	4 12 6
Failing to comply with notices requiring abatement of nuisances	..	1 1 0	0 ..	..	..	..	..	..	..	..	1 2 0	0 1 10	3 3 10
Failing to maintain concrete drains clean	..	1 15 0	..	..	..	..	..	..	..	..	..	..	1 15 0
Hawking milk without carrying badges	..	..	..	..	..	4 8 6	..	..	..	2 Reprimanded	1 2 6	1 5 0	8 16 0
Failing to provide bread carts with efficient cover	..	..	..	..	..	..	..	1 10 0	..	..	..	..	1 10 0
Failing to maintain eaves gutters in good repair and free from obstruction	..	..	..	..	..	..	1 Reprimanded	..	..	..	..	..	1 ..
Failing to obtain licences for sale of milk	..	..	..	..	..	..	..	..	..	5 Reprimanded	..	..	5 ..
Failing to maintain dustbins in good repair	..	..	..	..	..	..	..	..	..	..	..	1 Reprimanded	1 ..
Failing to register as cowkeepers	..	..	..	..	..	..	..	..	..	..	..	1 Reprimanded	1 ..
Total	20 7 10	0 11 3	10 0 11	17 6 5	1 15 0	23 0 17	6 13 2	3 6 24	12 15 0	6 31 10	0 20 5	2 6 27	1 5 0 230
													£71 18 6

